Evaluation of the Utilization of Digital Tools for Teaching Among Lecturers of Tertiary Institutions in Kogi State

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Abstract- ***The adoption of digital tools for teaching has become imperative because learners are apparently ahead of their teachers in the integration of digital tools to their daily lives. The justification of this study is to evaluate the relevance of the teacher in an age of digital pedagogy under the following variables: the awareness, availability, utilization and the impact of digital tools on teaching. The study employed the survey design. All the lecturers in the higher institutions in Kogi State formed the population; while the target population is all the 1,420 lecturers in three Federal Institutions in the State spread in the three senatorial zones/districts. A sample size of 312 lecturers were selected using the Yaro Yamene formula. A questionnaire titled, "Digital Tool Utilization Lecturers Questionnaire (DTULQ) with two sections. Section 1: bio-data and section 2: the research variables. Three Likert scale rating were used to measure the items in research questions 1, 2 and 3, while a four Likert scale rating was used to measure the items in research question 4. The instrument was given face and content validation by the three specialists in related areas. The split half method ensured the reliability of the instrument at 0.78. The data from the questionnaire used mean scores, correlation/relative importance index and ANOVA at 5%. The analysis was electronically done with the use of SPSS version 23.0 to answer the research question and ANOVA to test the stated hypotheses at 5% significant level. The findings revealed that there is awareness, availability, utilization and positive impact of digital tools across the tertiary institutions spread in the three senatorial districts. Consequently, all the hypotheses were accepted. It is recommended that there should be continuous development of digital tools, efforts by institutions to source grants, partnership and corroboration with agencies, and stakeholders' participation to address technical and systematic barriers.***

Keywords: Awareness, Availability, Utilization, Impact of Digital Tools.

I. INTRODUCTION

The COVID-19 pandemic threw a search light on the education sector in Nigeria. The associated protocols shut down the school system – lecturers and students were kept at home for a long period of time; thereby causing stagnation in teaching and learning. Yusuf and Alabi (2020:54) observe that, "the pandemic revealed both the critical role of technology in sustaining education and the systematic barriers to its utilization. As institutions such as those in Kogi State hurriedly started online platforms for teaching and learning and exploring innovations on digital education; the weaknesses were further exposed. According to UNESCO (2018), digital tools are instruments that allow users to create, store, process, retrieve and electronically share information. These tools cover a wide range of technologies such as: computers, mobile devices, projectors, visual learning environment etc. In fact, there are different types of digital tools based on their functions and usages: Productivity tools (Adeoye and Olugbara, 2021); Communication tools (Benson and Akinsola, 2019); Instruction tools (Nwankwo and Okoye, 2020); Assessment tools (Al-Azewei, Parstow and Lundqvist, 2017); Content creation and multimedia tools (Oyelami and Ojo, 2023); Cloud-Based Tools and Storage (Eze, Chinedu and Anyaogu, 2023); and Research and Academic tools (Ibrahim and Salihu, 2022).

The digital tools that are of interest to this study are the tools for instruction and for communication. Benson and Akinsola (2019:80) define communication tools as, "tools that enable real-time or asynchronous communication among users' they include: email services (Gmail), Instant Messaging (Whatsapp), Video Conferencing (Zoom, Microsoft Team) and Discussion boards and fora). They are used to facilitate and enhance teacher versus students, interactions their integration into tertiary education is important for effective teaching. Instruction Tools according to Nwankwo and Okoye (2020:31) are tools "specifically designed for teaching and learning process". The examples are: learning management systems (Moodle Google Classroom, Canvas); digital

whiteboards (Jamboard, Miro); interactive quizzes (Kahoot, Quiz); and educational games and simulations. Primarily, these tools assist in preparing assignments, lectures, projects and reports. These tools are supposed to have revolutionized tertiary education in Nigeria because they contribute significantly to learner motivation, autonomy, performance, flexibility in course delivery and access to learning beyond the limitations of time and space (Al-Azawei, Parstow and Lundqvist, 2017 and Adeoye and Olugbara, 2021).

As the field of education continues to become the place where various communication tools and instruction tools coverage and are tested, it has become expedient that teachers in tertiary institution in Nigeria should be better equipped for this revolution or be left behind. Olorundare (2014) observe that the students in Nigeria tertiary institutions have already embraced these technologies and are waiting for their teachers to catch up. In essence, COVID-19 pandemic is a blessing in disguise to the global education sector; particularly, in Nigeria and Kogi State because it inspired the search for alternatives to physical presence during teaching. This created an immense awareness for a shift towards digital teaching. While Iwu, Edeh and Okoro (2023) acknowledge that most lecturers in Nigeria are familiar with common digital tools like Microsoft, PowerPoint, Whatsapp, Zoom and Google Meet; Olorunfemi and Yusuf (2023) confirm the awareness of digital tools by the lecturers in Kogi State.

On the availability of the digital tools, the National Universities Commission (NUC) (2019) affirms that the Nigerian government through the National Universities Commission (NUC) and the Tertiary Education Trust Fund (TETFund), has made investments in ICT infrastructure in public universities. However, Ojo and Akinyemi (2021) claim that these investments are unevenly distributed and concentrated in urban campuses. Yusuf and Alabi (2020) assert that many Federal Universities in Nigeria have made progress in utilizing digital tools/platforms such as Moodle, Blackboard and Google Classroom. They add that many Polytechnics and Colleges of Education lag behind in the utilization/adoption of digital tools.

From the foregoing, this research is an effort to validate the existing opinions on the awareness, availability, utilization and the impact of digital tools among the three Federal Tertiary Institutions in Kogi State, Nigeria, namely: Federal University Lokoja (Kogi West), Federal Polytechnic, Idah (Kogi East) and Federal College of Education, Okene (Kogi Central).

Statement of the Problem/Justification

Federal Republic of Nigeria (2014) implies that, the nation's education programme is as good as its teachers. The teacher provides the impetus for the learners to have a stimulating experience; and the efficiency or otherwise of an academic programme. The digital age depends on the extent to which the teachers are exposed to the digital tools and their efficiency in the utilization. However, Olorundare (2014) notes that the students have embraced the digital technologies and are apparently waiting for their lecturers to catch up. To catch up, the teacher has to be aware of the digital tools (Iwu, Edeh & Okoro, 2023; Olorunfemi & Yusuf, 2023); the digital tools have to be available in the institutions (NUC, 2019; Ojo & Akinyemi, 2021); the teachers have to be conversant with the utilization of these digital tools (Yusuf & Alabi, 2020); and these tools should have impact on teaching (Eze, et al, 2023).

Nigeria operates a three pronged tertiary education system – university, polytechnic and College of Education and Kogi State has these three Federal owned tertiary institutions domiciled it. Ibrahim and Salihu (2022) opine that there are disparities in funding these institutions which may affect the availability and utilization of the digital tools.

Based on the above, this study is an effort to evaluate the awareness, availability, utilization and the impact of digital tools among the three Federal Tertiary Institutions in Kogi State.

Objective of the Study

The general objective of the study is to evaluate the utilization of digital tools for teaching among lecturers in the three federal government owned tertiary institutions in Kogi State. Specifically, the study investigated the following:

1. lecturers awareness of digital tools in tertiary institutions in Kogi State;
2. availability of digital tools;
3. utilization of the digital tools by the lecturers; and
4. the impact of digital tools on teaching.

Research Questions

The following research questions are generated to guide this study:

1. is there awareness of digital tools among lecturers in tertiary institutions in Kogi State?;
2. how available are digital tools for teachings?;
3. are digital tools utilized by lecturers in tertiary institutions in Kogi State for teaching ?; and
4. what is the impact of digital tools on teaching in tertiary institutions in Kogi State?

Research Hypotheses

The following hypotheses are hereby formulated to guide this study:

Ho_1: there is no significant influence of the awareness of digital tools on the teaching of lecturer;
Ho_2: there is no significant influence of the availability of digital tools on the teaching of lecturers in tertiary institutions in Kogi State;
$H0_3$: there is no significant influence of utilization of digital tools on the teaching of lecturers; and
Ho_4: there is no significant impact of digital tools on the teaching of lecturers in tertiary institution in Kogi State.

II. REVIEW OF RELATED LITERATURE

The related literatures for this study were treated under the following sub-topics:

1. Conceptual Issues on Evaluation and Digital Tools
2. Lecturers' Awareness of Digital Tools
3. Availability of Digital Tools for Teaching
4. The utilization of Digital Tools
5. The impact of Digital Tools on Teaching in Tertiary institutions in Kogi State
6. Summary of the Reviewed Literatures.

Conceptual Issues on Evaluation and Digital Tools

Evaluation in education has been defined in various ways by recent scholars, but common themes include its systematic nature, value judgments, and improvement-oriented functions. Neubauer, LaVelle, Boyce, Archibald, Bustelo, Koro-Ljungberg, & McKegg (2023) describe evaluation as more than measurement, highlighting that it encompasses value judgments, ethical stances, and responsiveness to stakeholders, positioning it as a critical component of education and training. Similarly, Vegliantè (2025) defines evaluation as a complex and multifaceted process linked to teaching and planning, which regulates behaviours, refines actions, and adapts interventions to suit learning contexts while involving both teachers and students. From a Nigerian perspective, Ohiri and Ihenacho (2023) explain that educational evaluation is integral to the teaching process, functioning as a tool for measuring instructional outcomes through diagnostic, formative, and summative approaches. Evaluation plays an important role in ascertaining whether academic objectives meet the intended goals and contribute meaningful to learning outcomes. It is a systemic process of gathering, analyzing and interpreting data to determine the efficiency of a given intervention, tool or instructional strategy, just as it is being done in this research.

Digital tools in education are broadly defined as technologies-both hardware and software-that support and enhance the teaching process. Modern definitions include devices such as tablets, computers, interactive whiteboards, and mobile phones, as well as software applications and online platforms like learning management systems, virtual classrooms, and digital textbooks (Tolosa-Casadont, 2022; Ajayi, 2023; Aziza, 2024; "Educational Technologies," 2025). These tools serve multiple functions: facilitating communication between teachers and students; enabling content delivery, assessment, and feedback; personalizing and adapting learning paths; and increasing inclusivity via assistive technologies. They also allow for more dynamic interactions, remote or hybrid learning environments, and the integration of emerging technologies such as virtual reality and artificial intelligence ("Educational Technologies," 2025; Ajayi, 2023). Thus, digital tools are not just the equipment or software per se, but part of a larger ecosystem aiming to make learning more accessible, engaging, effective, and responsive to individual learner needs. These are instruments that allow users to create, store, process, retrieve and share information electronically.

Lecturers' Awareness of Digital Tools

Awareness of digital tools is a key factor in whether or not lecturers use them effectively in teaching. It goes beyond simply knowing that a tool exists, it includes understanding how it works, its educational value, technical demands, and even its limitations. The more lecturers understand what these tools can do for their teaching, the more likely they are to try

them out and include them in their classroom practices (Aminu and Salami, 2022). After the COVID-19 pandemic, digital awareness have become more important than ever across the world. Iwu, Edeh and Okoro (2023) note that most Nigerian lecturers are familiar with common tools like Microsoft PowerPoint, WhatsApp, Zoom, and Google Meet. However, fewer are aware of more advanced platforms like Google Classroom, Canvas, Padlet, and Loom tools that often require training and institutional support to become part of everyday teaching.

In Kogi State, this pattern holds true. Lecturers are generally comfortable using basic communication and presentation tools, but less familiar with full-scale learning management systems or digital assessment platforms. A study by Olorunfemi and Yusuf (2023) involving 200 academic staff reveal that while 85 percent regularly used PowerPoint and WhatsApp, only 26 percent had heard of Canvas, and less than 18 percent had used interactive tools like Kahoot or Google Forms. More importantly, awareness should include knowing how to use these tools to improve learning. Knowing a tool exists is not the same as knowing how to use it well. Many lecturers may be aware of platforms like Google Forms, but may not know how to design meaningful assessments or interpret results to support student learning (Oluwaseun and Bello, 2023). In summary, while most lecturers in Kogi State are aware of basic digital tools, there is a clear gap in awareness of more advanced, interactive, and pedagogically powerful technologies.

Availability of Digital Tools for Teaching

The availability of digital tools for teaching in federal tertiary institutions within Kogi State has experienced notable improvements in recent years, largely influenced by the global shift toward digital learning and the unprecedented impact of the COVID-19 pandemic. The pandemic exposed the urgent need for technological adaptation in Nigeria's education sector, pushing institutions to seek and implement digital solutions to ensure academic continuity. Consequently, tertiary education institutions such as Federal University, Lokoja; Federal Polytechnic, Idah; and Federal College of Education, Okene have made incremental strides in integrating Information and Communication Technology (ICT) infrastructure to support digital teaching. These efforts have included the introduction of Learning Management Systems (LMS), provision of wireless internet (Wi-Fi) connectivity in select faculties, establishment of computer laboratories, and the deployment of projectors and smart classrooms in some departments.

Despite these developments, the availability of digital tools remains uneven across Federal, State and Private institutions. Factors such as administrative priorities, government funding, external grants, and the strength of institutional leadership significantly affect the level of digital infrastructure in each school. In some campuses, lecturers and students benefit from partially functional LMS platforms like Moodle and Google Classroom, while in others, the absence of dedicated ICT support forces academic staff to depend on personal smartphones, laptops, and mobile data for content delivery. The digital divide is further widened by unstable electricity, limited broadband penetration, and inadequate maintenance of digital facilities, particularly in rural-based institutions (Olagunju & Adewale, 2023).

Additionally, while federal and state government initiatives such as the Tertiary Education Trust Fund (TETFund) ICT intervention have contributed to improving digital access, these efforts have not always translated into consistent or sustainable digital teaching environments. Non-governmental organizations and international donor agencies have also played a supplementary role by sponsoring training programmes and providing equipment to select institutions. However, such initiatives often reach only a fraction of academic departments, leaving others underserved and reliant on improvisation.

A study conducted by Salihu (2022), reports that only 40 percent of lecturers across selected higher institutions in Kogi State had access to officially supported digital teaching platforms. The remaining 60 percent primarily depended on improvised digital tools, such as personal WhatsApp groups, Zoom accounts, and freely available platforms like Telegram and Google Meet, often at their own expense. This finding highlights the systemic challenge of ensuring equitable availability of digital tools across the entire tertiary education sector in the state.

The Utilization of Digital Tools

Utilization refers to the extent to which available instructional technologies are actively adopted and effectively integrated into the teaching. It encompasses not only the availability of digital tools, but also their actual use in delivering lessons, assessing learners, managing classrooms, and facilitating communication. Utilization involves multiple dimensions, including frequency of use, purpose of use, and the pedagogical strategies employed while using these technologies. For instance, a lecturer may use a Learning Management System (LMS) like Moodle to share course materials weekly, employ Zoom or Google Meet for synchronous lectures, and utilize Google Forms or Microsoft Teams for quizzes and collaborative projects. Each of these practices contributes to the broader understanding of utilization.

Several key factors influence the level of utilization of digital tools in education. Accessibility remains a primary determinant. Without adequate access to stable internet, digital devices, and appropriate software, effective utilization becomes nearly impossible. In many developing regions, including parts of Nigeria, infrastructural limitations such as erratic power supply, low bandwidth, and lack of institutional provision for digital tools hinder lecturers from fully utilizing available technologies (Okeke & Iroegbu, 2023). User competence also plays a significant role. Lecturers should possess the necessary digital literacy skills to navigate and apply these tools appropriately. A study by Abubakar and Musa (2022) found a strong positive correlation between lecturers' ICT competence and their level of digital tool usage in Nigerian universities.

Furthermore, institutional support is critical in determining how well digital tools are used. Support may come in the form of training, technical assistance, and the development of policies that encourage digital integration. When institutions invest in professional development programmes, provide functional ICT units, and recognize the efforts of digitally inclined lecturers are more likely to adopt and continuously use educational technologies (Eze & Olojo, 2023). Another influential factor is perceived usefulness, as proposed by Davis in the Technology Acceptance Model (TAM). Lecturers are more inclined to use digital tools when they believe those tools will enhance their teaching effectiveness and improve student learning outcomes (Adebayo, 2023).

The utilization of digital tools is, therefore, a multifaceted concept shaped by both external and internal conditions. High utilization requires a supportive ecosystem that provides access, builds capacity, and fosters positive attitudes toward educational technology. In contemporary higher education systems, especially in the post-COVID-19 era, enhancing utilization has become not only a goal but a necessity for improving instructional quality, student engagement, and institutional resilience.

The Impact of Digital Tools on Teaching in Tertiary Institutions in Kogi State

Lawal and John (2022) explored the perceived influence of digital platforms on student engagement and learning outcomes in higher institutions in Kogi State. Using an experimental design and pre- and post-intervention assessments, the study found that students exposed to lessons via Google Classroom and WhatsApp groups demonstrated better attendance, participation, and assignment submission rates. The researchers recommended formal integration of such tools into curricula as a way of enriching teaching methodologies. Okoye and Musa (2023) investigated the effect of using PowerPoint and interactive videos in large classes at Kogi State Polytechnic. Using paired-sample t-tests, the study found significant improvement in students' understanding and retention when digital tools were incorporated into lessons. They advised that lecturers should be trained in instructional design to better harness the capabilities of digital content creation.

The focus group discussions and surveys to assess students' perception of digital tool usage among lecturers was used by Ojo and Yakubu (2023). The results indicated that students appreciated digital delivery but were often frustrated by the irregular tool use and inadequate feedback. The study recommended that institutions implement standard operating procedures for digital teaching, including time-bound communication protocols and structured feedback mechanisms. In a like manner, Suleiman and Abdul (2024) examined institutional support and its influence on the impact of digital tool utilization. Using regression analysis on data from 104 lecturers across four higher institutions in Kogi State, the study found a strong positive relationship between institutional support (such as access to technical support and provision of data bundles) and the effectiveness of digital teaching. The impact of

digital tools in teaching is multifaceted. They enhance engagement, support personalization and improve academic performance. However, stakeholders have to address the technical, pedagogical and systematic barriers that presently limit their full potential.

III. SUMMARY OF THE REVIEWED LITERATURES

The efforts to evaluate how digital tools are utilized in teaching have drawn growing interest from education stakeholders. These digital tools range from platforms and resources such as learning management systems, video conferencing platforms to content creation applications that support teaching, communication, collaboration, and student engagement in both physical and virtual classrooms.

Many lecturers are quite aware of commonly used tools like Microsoft PowerPoint, Zoom, and WhatsApp while fewer lecturers are aware of or utilize more advanced or interactive platforms like Google Classroom, Padlet, and Kahoot. These digital tools are becoming more available in tertiary institutions across Kogi State. However, this availability is not evenly spread. Federal institutions tend to be better equipped compared to many state-owned or private institutions.

The level to which these tools are utilized remain modest. Several challenges continue to hold back broader utilization such as poor infrastructure, irregular electricity, limited internet access, and gaps in digital skills. Inspite of these, when digital tools are properly integrated into teaching they positively impact on teaching.

IV. METHODOLOGY

This research employed the survey design. The population comprised of all lecturers of Federal tertiary institutions in Kogi State. The target population is all the 1, 420 lecturers of the three Federal institutions in the State. They were considered to be the target population since they are funded by the Federal government. The three institutions are; Kogi Central Senatorial Zone: Federal College of Education, Okene, Kogi West Senatorial Zone: Federal University Lokoja and Kogi East Senatorial Zone: Federal Polytechnic, Idah. To get the sample size, the Yaro Yamane formular was employed, which gave a sample size of 321 which each institution is 107 sampled for analysis. Thereafter, the disproportionate stratified random sampling was used to select equal sub-samples from each Senatorial Zone. Thus, 104 lecturers were selected per institution in the senatorial Zone. A questionnaire titled 'Digital Tools Utilization Lecturers Questionnaire' (DTULQ) was used to collect quantitative data for the study. The questionnaire has two sections; the first part is on bio data, the second part is designed on a three Likert scale rating to measure the items in research questions 1, 2 and 3. A four Likert scale rating was used to measure the items on research question 4. The face and content validity of the instrument was done by three specialists in Computer Science from a University, a Polytechnic and a College of Education in the State. The reliability of the instrument was established by the Split half method. The data generated from the questionnaire in the study area used mean scores responses, correlation/relative importance index and analysis of variance at 5%. The analysis was carried electronically with the use of SPSS version 23.0 to answer the research questions and ANOVA to test the stated hypotheses at 5% significant level. The research items attained internal consistency of 0.78 which indicated that the instrument for the study is reliable at 78%.

V. ANALYSIS AND INTERPRETATION OF RESULTS

Evaluation of the utilization of digital tools for teaching among lecturers of tertiary institutions in Kogi State considering institutions in Kogi East, Central and West Senatorial Districts

Kogi East

RQ 1: Is there of awareness of digital tools among lecturers in tertiary institutions in Kogi State

I am aware that the following digital tools can be used for teaching

Items	Always	Sometimes	Never	Total	Sum	Mean	RII	Scale
Computers	82	14	11	107	285	2.66	0.67	Always

Projectors	77	18	12	107	279	2.61	0.65	Always
Flash Drives	69	20	18	107	265	2.48	0.62	Sometime
CD/DVD ROMS	67	20	20	107	261	2.44	0.61	Sometimes
Speaker and Microphone	76	18	13	107	277	2.59	0.65	Always
Graphic Calculators	53	26	28	107	239	2.23	0.56	Sometimes
Internet Connection	70	22	15	107	269	2.51	0.63	Always
Interactive Board	61	27	19	107	256	2.39	0.60	Sometimes
Bluetooth	56	29	22	107	248	2.32	0.58	Sometimes
Software Packages	54	28	25	107	81	2.76	2.69	Always
Card Readers	47	32	28	107	233	2.18	0.54	Sometimes
Television	66	23	18	107	262	2.45	0.61	Always
Smart Phone	72	18	17	107	269	2.51	0.63	Always
Video Games	46	25	36	107	224	2.09	0.52	Sometimes
Cameras	57	22	28	107				Always
Grand Total						2.44	0.75	

A = Always Aware, UN = Sometimes Aware, NA = Never Aware

Investigating the awareness of digital tools for teaching in Kogi East Institution, the mean score analysis shows that lecturers are aware of computers, projectors, speaker and microphone, software packages, television, smart phone and camera. They were undecided on flash drives, CD/DVD ROMS, graphic calculators, interactive board, Bluetooth, card readers, video games. The finding suggested that lecturers' awareness of computers, projectors, speaker and microphone, software packages, television, smart phone and camera were highly correlated.

RQ 2: Availability of digital tools for teachings

The following digital tools are available in my school for teaching

Items	Always	Sometimes	Never	Total	Sum	Mean	RII	Scale
Computers	80	15	12	107	282	2.64	0.66	Always
Projectors/projector screen.	73	20	14	107	273	2.55	0.64	Always
Flash Drives	69	21	17	107	266	2.49	0.62	Always
CD/DVD ROMS	67	19	21	107	260	2.43	0.61	Sometimes
Speaker and Microphone	63	22	22	107	255	2.38	0.60	Sometimes
Graphic Calculators	30	40	37	107	207	1.93	0.48	Sometimes
Internet Connection	47	29	31	107	230	2.15	0.54	Sometimes
Interactive Board	45	35	27	107	232	2.17	0.54	Sometimes
Bluetooth, wifi	45	37	25	107	234	2.19	0.55	Sometimes
Software Packages	36	40	31	107	219	2.05	0.51	Sometimes
Card Readers	37	40	30	107	221	2.07	0.52	Sometimes
Television	55	28	24	107	245	2.29	0.57	Sometimes
Smart Phone	20	37	50	107	184	1.72	0.43	Sometimes
Video Games	31	36	40	107	205	1.92	0.48	Sometimes

Cameras	0	10	10	20				Always
Grand Total						2.21	0.55	

A = Always Available, UN = Sometimes Available, NA = Never Available

In terms of "What digital tools are available for teaching among lecturers in tertiary institutions in Kogi East", The mean score analysis and correlation of response analysis confirmed that most of the respondents in Kogi East Institution confirmed that Computers, Projectors/projector screen, Flash Drives and camera were available. CD/DVD ROMS, Speaker and Microphone, Graphic Calculators, Internet Connection, Interactive Board, Bluetooth, wifi, Software Packages, Card Readers, Television, Smart Phone and Video Games were sometimes undecided. Finding shows that Computers, Projectors/projector screen, Flash Drives and camera are digital tools available for teaching among lecturers in tertiary institutions in Kogi East

RQ3: Digital tools utilized by lecturers in tertiary institutions in Kogi State for teaching?
I use the following digital tools for teaching

Items	Always 3	Sometimes 2	Never 1	Total	Sum	Mean	RII	Scale
Computers	43	53	11	107	246	2.30	0.57	Sometimes
Projectors	36	51	20	107	230	2.15	0.54	Sometimes
Flash Drives	30	47	30	107	214	2.00	0.50	Sometimes
CD/DVD ROMS	24	46	37	107	201	1.88	0.47	Sometimes
Speaker and Microphone	39	42	26	107	227	2.12	0.53	Sometimes
Graphic Calculators	13	41	53	107	174	1.63	0.41	Sometimes
Internet Connection	28	54	25	107	217	2.03	0.51	Sometimes
Interactive Board	28	48	31	107	211	1.97	0.49	Sometimes
Bluetooth	24	49	34	107	204	1.91	0.48	Sometimes
Software Packages	20	48	39	107	215	2.07	0.53	Sometimes
Card Readers	16	44	47	107	183	1.71	0.43	Sometimes
Television	28	40	39	107	203	1.90	0.47	Sometimes
Smart Phone	45	38	24	107	235	2.20	0.55	Sometimes
Video Games	15	38	54	107	175	1.64	0.41	Sometimes
Cameras	18	42	47	107				Always
Grand Total						1.97	0.49	

A = Always use, UN = Sometimes use, NA = Never in use

Analysing the digital tools utilized by lecturers in tertiary institutions in Kogi State, the mean score analysis depicts that camera is always used. Computers, Projectors, Flash Drives, CD/DVD ROMS, Speaker and Microphone, Graphic Calculators, Internet Connection, Interactive Board, Bluetooth, Software Packages, Card Readers, Television, Smart Phone, Video Games are sometimes used as digital tools for lecturing in higher institution

RQ 4: Impact of digital tools on teaching in tertiary institutions in Kogi State?

	Items	4	3	2	1				
S/N		SA	A	D	SD	Total	Sum	Mean	RII

1	Digital tools appeal to different senses of learning thereby taking care of individual differences in learning	56	26	15	10	107	342	3.2	0.80
2	They expose the learners to multi-modal sources of information	56	27	15	9	107	344	3.21	0.80
3	They help every learner to learn at his/her own pace	45	35	16	11	107	328	3.07	0.77
4	They break the high dependence on lecturers as the major source of knowledge	50	28	15	14	107	328	3.07	0.77
	Grand Total							3.14	0.79

SA = Strongly Agree, A=Agreed, D =Disagree, SD=Strongly Disagree

Results show that there is overall agreement that Digital tools appeal to different senses of learning thereby taking care of individual differences in learning; They expose the learners to multi-modal sources of information; They help every learner to learn at his/her own pace and they break the high dependence on lecturers as the major source of knowledge were the impact of digital tools in teaching in tertiary institutions in Kogi East.

Kogi Central

RQ 1: Is there awareness of digital tools among lecturers in tertiary institutions in Kogi State

I am aware that the following digital tools can be used for teaching

Items	Always	Sometimes	Never	Total	Sum	Mean	RII	
Computers	82	14	11	107	285	2.66	0.67	Always
Projectors	77	18	12	107	279	2.61	0.65	Always
Flash Drives	69	20	18	107	265	2.48	0.62	Always
CD/DVD ROMS	67	20	20	107	261	2.44	0.61	Sometimes
Speaker and Microphone	76	18	13	107	277	2.59	0.65	Always
Graphic Calculators	53	26	28	107	239	2.23	0.56	Sometimes
Internet Connection	70	22	15	107	269	2.51	0.63	Always
Interactive Board	61	27	19	107	256	2.39	0.60	Sometimes
Bluetooth	56	29	22	107	248	2.32	0.58	Sometimes
Software Packages	54	28	25	107	243	2.27	0.57	Sometimes
Card Readers	47	32	28	107	233	2.18	0.54	Sometimes
Television	66	23	18	107	262	2.45	0.61	Sometimes
Smart Phone	72	18	17	107	269	2.51	0.63	Always
Video Games	46	25	36	107	224	2.09	0.52	Sometimes
Cameras	57	22	28	107				Always
Grand Total						2.41	0.60	

A = Always Aware, UN = Sometimes Aware, NA = Never Aware

Investigating the lecturers' awareness of digital tools can be used for teaching in Kogi Central Institution, the mean score analysis shows that Computers, Projectors, Speaker and Microphone, Software Packages, Television, Smart Phone, Internet Connection and camera were always aware as digital tools that can be utilized for teaching. Flash Drives, CD/DVD ROMS, Graphic Calculators, Interactive Board, Bluetooth, Card Readers, Video Games were undecided as digital tools that can be used for teaching in the institutions in Kogi Central. The finding suggested that the awareness level of

computers, projectors, speaker and microphone, internet connection, software packages, television, smart phone and camera were highly correlated.

RQ 2: Availability of digital tools for teachings
The following digital tools are available in my school for teaching

Items	Always	Sometimes	Never	Total	Sum	Mean	RII	
Computers	80	15	12	107	282	2.64	0.66	Always
Projectors/projector screen.	73	20	14	107	273	2.55	0.64	Always
Flash Drives	69	21	17	107	266	2.49	0.62	Always
CD/DVD ROMS	67	19	21	107	260	2.43	0.61	Sometimes
Speaker and Microphone	63	22	22	107	255	2.38	0.60	Sometimes
Graphic Calculators	30	40	37	107	207	1.93	0.48	Sometimes
Internet Connection	47	29	31	107	230	2.15	0.54	Sometimes
Interactive Board	45	35	27	107	232	2.17	0.54	Sometimes
Bluetooth, wifi	45	37	25	107	234	2.19	0.55	Sometimes
Software Packages	36	40	31	107	219	2.05	0.51	Sometimes
Card Readers	37	40	30	107	221	2.07	0.52	Sometimes
Television	55	28	24	107	245	2.29	0.57	Sometimes
Smart Phone	20	37	50	107	184	1.72	0.43	Sometimes
Video Games	31	36	40	107	205	1.92	0.48	Sometimes
Cameras	0	10	10	20				Always
Grand Total						2.21	0.55	

A = Always Available, UN = Sometimes Available, NA = Never Available

In terms of "What digital tools are available for teaching among lecturers in tertiary institutions in Kogi Central", the mean score analysis and correlation of response analysis confirmed that most of the respondents in Kogi Central Institution confirmed that: Computers, Projectors/projector screen, Flash Drives and camera were also available. CD/DVD ROMS, Speaker and Microphone, Graphic Calculators, Internet Connection, Interactive Board, Bluetooth, wifi, Software Packages, Card Readers, Television, Smart Phone and Video Games were sometimes undecided. Finding shows that Computers, Projectors/projector screen, Flash Drives and camera are digital tools available for teaching among lecturers in tertiary institutions.

RQ3: Digital tools utilized by lecturers in tertiary institutions in Kogi State for teaching
I use the following digital tools for teaching

Items	Always	Sometimes	Never	Total	Sum	Mean	RII	
Computers	43	53	11	107	246	2.30	0.57	Sometimes
Projectors	36	51	20	107	230	2.15	0.54	Sometimes
Flash Drives	30	47	30	107	214	2.00	0.50	Sometimes
CD/DVD ROMS	24	46	37	107	201	1.88	0.47	Sometimes
Speaker and Microphone	39	42	26	107	227	2.12	0.53	Sometimes
Graphic Calculators	13	41	53	107	174	1.63	0.41	Sometimes
Internet Connection	28	54	25	107	217	2.03	0.51	Sometimes

Interactive Board	28	48	31	107	211	1.97	0.49	Sometimes
Bluetooth	24	49	34	107	204	1.91	0.48	Sometimes
Software Packages	20	48	39	107	195	1.82	0.46	Sometimes
Card Readers	16	44	47	107	183	1.71	0.43	Sometimes
Television	28	40	39	107	203	1.90	0.47	Sometimes
Smart Phone	45	38	24	107	235	2.20	0.55	Sometimes
Video Games	15	38	54	107	175	1.64	0.41	Sometimes
Cameras	18	42	47	107				Always
Grand Total						1.95	0.49	

A = Always use, UN = Sometimes use, NA = Never in use

Analysing the digital tools used by lecturers in tertiary institutions in Kogi State, the mean score analysis depicts that camera is always used. Computers, Projectors, Flash Drives, CD/DVD ROMS, Speaker and Microphone, Graphic Calculators, Internet Connection, Interactive Board, Bluetooth, Software Packages, Card Readers, Television, Smart Phone, Video Games are sometimes used as digital tools for lecturing in tertiary institution.

RQ 4: Impact of digital tools on teaching in tertiary institutions in Kogi State

	Items	4	3	2	1				
S/N		SA	A	D	SD	Total	Sum	Mean	RII
1	Digital tools appeal to different senses of learning thereby taking care of individual differences in learning	56	26	15	10	107	342	3.20	0.80
2	They expose the learners to multi-modal sources of information	56	27	15	10	108	345	3.19	0.80
3	They help every learner to learn at his/her own pace	45	36	16	11	108	331	3.06	0.77
4	They break the high dependence on lecturers as the major source of knowledge	50	29	15	10	104	327	3.14	0.79
								3.15	0.79

SA = Strongly Agree, A=Agreed, D =Disagree, SD=Strongly Disagree

Results show that there is overall agreement that Digital tools appeal to different senses of learning thereby taking care of individual differences in learning; They expose the learners to multi-modal sources of information. They help every learner to learn at his/her own pace and They break the high dependence on lecturers as the major source of knowledge were the impact of digital tools in teaching in higher institutions in Kogi Central.

Kogi West

RQ 1: Is there awareness of digital tools among lecturers in tertiary institutions in Kogi State

I am aware that the following digital tools can be used for teaching

Items	Always	Sometimes	Never	Total	Sum	Mean	RII	
Computers	82	14	11	107	285	2.66	0.67	Always
Projectors	77	18	12	107	279	2.61	0.65	Always
Flash Drives	69	20	18	107	265	2.48	0.62	Always
CD/DVD ROMS	67	20	20	107	261	2.44	0.61	Sometimes

Speaker and Microphone	76	18	13	107	277	2.59	0.65	Always
Graphic Calculators	53	26	28	107	239	2.23	0.56	Sometimes
Internet Connection	70	22	15	107	269	2.51	0.63	Always
Interactive Board	61	27	19	107	256	2.39	0.60	Sometimes
Bluetooth	56	29	22	107	248	2.32	0.58	Sometimes
Software Packages	54	28	25	107	243	2.27	0.57	Sometimes
Card Readers	47	32	28	107	233	2.18	0.54	Sometimes
Television	66	23	18	107	262	2.45	0.61	Sometimes
Smart Phone	72	18	17	107	269	2.51	0.63	Always
Video Games	46	25	36	107	224	2.09	0.52	Sometimes
Cameras	57	22	28	107				Always
							2.36	0.59

A = Always Aware, UN = Sometimes Aware, NA = Never Aware

Investigating the lecturers' awareness of digital tools can be used for teaching in Kogi West Institution, the mean score analysis shows that Computers, Projectors, Speaker and Microphone, Software Packages, Television, Smart Phone, Internet Connection and camera were always aware as digital tools that can be used for teaching. Flash Drives, CD/DVD ROMS, Graphic Calculators, Interactive Board, Bluetooth, Card Readers, Video Games were undecided as digital tools that can be used for teaching in the institutions in Kogi West. The finding suggested that Computers, Projectors, Speaker and Microphone, Internet Connection, Software Packages, Television, Smart Phone and camera were highly correlated as digital tools aware for teaching.

RQ 2: Availability of digital tools for teachings

The following digital tools are available in my school for teaching

Items	Always	Sometimes	Never	Total	Sum	Mean	RII	
Computers	80	15.00	12.00	107	282	2.64	0.66	Always
Projectors/projector screen.	73	20.00	14.00	107	273	2.55	0.64	Always
Flash Drives	69	21.00	17.00	107	266	2.49	0.62	Always
CD/DVD ROMS	67	19.00	21.00	107	260	2.43	0.61	Sometimes
Speaker and Microphone	63	22.00	22.00	107	255	2.38	0.60	Sometimes
Graphic Calculators	30	40.00	37.00	107	207	1.93	0.48	Sometimes
Internet Connection	47	29.00	31.00	107	230	2.15	0.54	Sometimes
Interactive Board	45	35.00	27.00	107	232	2.17	0.54	Sometimes
Bluetooth, wifi	45	37.00	25.00	107	234	2.19	0.55	Sometimes
Software Packages	36	40.00	31.00	107	219	2.05	0.51	Sometimes
Card Readers	37	40.00	30.00	107	221	2.07	0.52	Sometimes
Television	55	28.00	24.00	107	245	2.29	0.57	Sometimes
Smart Phone	20	37	50	107	184	1.72	0.43	Sometimes
Video Games	31	36	40	107	205	1.92	0.48	Sometimes
Cameras				107				Always
							2.21	0.55

A = Always Available, UN = Sometimes Available, NA = Never Available

In terms of availability of digital tools for teachings, the mean score analysis and correlation of response analysis confirmed that most of the respondents in Kogi West Institution confirmed that: Computers, Projectors/projector screen, Flash Drives and camera were also available. CD/DVD ROMS, Speaker and Microphone, Graphic Calculators, Internet Connection, Interactive Board, Bluetooth, wifi, Software Packages, Card Readers, Television, Smart Phone and Video Games were sometimes undecided. Finding shows that Computers, Projectors/projector screen, Flash Drives and camera are digital tools available for teaching among lecturers in tertiary institutions in Kogi West.

RQ3: Digital tools utilized by lecturers in tertiary institutions in Kogi State for teaching?
I use the following digital tools for teaching

I use the following digital tools for teaching	3	2	1					
Items	Always	Sometimes	Never	Total	Sum	Mean	RII	
Computers	43	53	11	107	246	2.30	0.57	Sometimes
Projectors	36	51	20	107	230	2.15	0.54	Sometimes
Flash Drives	30	47	30	107	214	2.00	0.50	Sometimes
CD/DVD ROMS	24	46	37	107	201	1.88	0.47	Sometimes
Speaker and Microphone	39	42	26	107	227	2.12	0.53	Sometimes
Graphic Calculators	13	41	53	107	174	1.63	0.41	Sometimes
Internet Connection	28	54	25	107	217	2.03	0.51	Sometimes
Interactive Board	28	48	31	107	211	1.97	0.49	Sometimes
Bluetooth	24	49	34	107	204	1.91	0.48	Sometimes
Software Packages	20	48	39	107	195	1.82	0.46	Sometimes
Card Readers	16	44	47	107	183	1.71	0.43	Sometimes
Television	28	40	39	107	203	1.90	0.47	Sometimes
Smart Phone	45	38	24	107	235	2.20	0.55	Sometimes
Video Games	15	38	54	107	175	1.64	0.41	Sometimes
Cameras	18	42	47	107				Always
						1.95	0.49	

A = Always use, UN = Sometimes use, NA = Never in use

Analysing the digital tools used by lecturers in higher institutions in Kogi West, the mean score analysis depicts that camera is always used. Computers, Projectors, Flash Drives, CD/DVD ROMS, Speaker and Microphone, Graphic Calculators, Internet Connection, Interactive Board, Bluetooth, Software Packages, Card Readers, Television, Smart Phone, Video Games are sometimes used as digital tools for lecturing in higher institution.

RQ 4: Impact of digital tools on teaching in tertiary institutions in Kogi State?

	Items	4	3	2	1				
S/N		SA	A	D	SD	Total	Sum	Mean	RII
1	Digital tools appeal to different senses of learning thereby taking care of individual differences in learning	56	26	15	10	107	342	3.2	0.8
2	They expose the learners to multi-modal sources of information	56	27	14	10	107	343	3.21	0.8

3	They help every learner to learn at his/her own pace	44	36	16	11	107	327	3.07	0.77
4	They break the high dependence on lecturers as the major source of knowledge	45	27	15	20	107	311	3.07	0.77
								3.14	0.79

SA = Strongly Agree, A=Agreed, D =Disagree, SD=Strongly Disagree

Results shows that there is overall agreement that Digital tools appeal to different senses of learning thereby taking care of individual differences in learning; They expose the learners to multi-modal sources of information; They help every learner to learn at his/her own pace and they break the high dependence on lecturers as the major source of knowledge were the impact of digital tools in teaching in higher institutions in Kogi West.

Test of Research Hypotheses

To address the research questions in line with the research objectives, the following research hypotheses were tested based on mean score response analyses using analysis of variance (ANOVA) at 5% level of significance.

Ho_1: there is no significant influence of the awareness of digital tools on the teaching of lecturer;

Ho_2: there is no significant influence of the availability of digital tools on the teaching of lecturers in tertiary institutions in Kogi State;

$H0_3$: there is no significant influence of utilization of digital tools on the teaching of lecturers; and

Ho_4: there is no significant impact of digital tools on the teaching of lecturers in tertiary institution in Kogi State.

The data used for the analysis was the aggregated mean score responses on availability, awareness, usage and impact of digital tools across the Kogi East, Central and West higher institutions.

VI. HYPOTHESES TEST RESULTS

Ho_1: there is no significant influence of the awareness of digital tools on the teaching of lecturer;

Dependent Variable: Availability of Digital Tools

Source	Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	6.661E-15[a]	2	3.331E-15	.000	1.000
Intercept	205.663	1	205.663	2919.161	.000
Institutions availability	.000	2	.000	.000	1.000
Error	2.748	39	.070		
Total	208.411	42			
Corrected Total	2.748	41			

a. R Squared = .000 (Adjusted R Squared = -.051)

The table revealed that there is no significant influence of the awareness of digital tools on the teaching of lecturer tertiary institution in Kogi State as the f-statistic (0.00) with associated probability of (1.00) is greater than 0.05% level indicating that the Ho_2 is accepted. Therefore, across the districts in the Kogi State availability of digital tools for teaching of lecturers in higher institutions in Kogi State is the same;

Ho_2: there is no significant influence of the availability of digital tools on the teaching of lecturers in tertiary institutions in Kogi State

Dependent Variable: Awareness of Digital Tools

Source	Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	.011[a]	2	.006	.183	.834
Intercept	246.162	1	246.162	7864.431	.000
Institutions awareness	.011	2	.006	.183	.834

Error	1.221	39	.031		
Total	247.395	42			
Corrected Total	1.232	41			

a. R Squared = .009 (Adjusted R Squared = -.042)

The table revealed that there is no significant influence of the availability of digital tools on the teaching of lecturers in tertiary institutions in Kogi State as the f-statistic (0.183) with associated probability of (0.834) is greater than 0.05% level indicating that the Ho_1 is accepted. Therefore, across the districts in the Kogi State awareness of digital tools for teaching of lecturers in higher institutions in Kogi State is the same;

$H0_3$: there is no significant influence of utilization of digital tools on the teaching of lecturers.

Dependent Variable: Utilization of Digital Tools

Source	Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	.003[a]	2	.001	.036	.965
Intercept	160.212	1	160.212	3833.958	.000
Institutions Usage	.003	2	.001	.036	.965
Error	1.630	39	.042		
Total	161.845	42			
Corrected Total	1.633	41			

a. R Squared = .002 (Adjusted R Squared = -.049)

The table revealed that there is no significant influence of utilization of digital tools on the teaching of lecturers in tertiary institution in Kogi State as the f-statistic (0.036) with associated probability of (0.065) is greater than 0.05% level indicating that the Ho_3 is accepted. Therefore, across the districts in the Kogi State utilization of digital tools for teaching of lecturers in tertiary institutions in Kogi State is the same.

Ho_4: there is no significant impact of digital tools on the teaching of lecturers in tertiary institution in Kogi State.

Tests of Between-Subjects Effects

Dependent Variable: Impact of Digital Tools

Source	Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	.006[a]	2	.003	.310	.741
Intercept	117.313	1	117.313	11698.757	.000
Institutionsk	.006	2	.003	.310	.741
Error	.090	9	.010		
Total	117.409	12			
Corrected Total	.096	11			

a. R Squared = .064 (Adjusted R Squared = -.143)

The table revealed that there is no significant impact of digital tools on the teaching of lecturers in tertiary institution in Kogi State as the f-statistic (0.310) with associated probability of (0.741) is greater than 0.05% level indicating that the Ho_4 is accepted. Therefore, across the districts in the Kogi State impact of digital tools for teaching of lecturers in higher institutions in Kogi State is the same;

VII. CONCLUSION

The finding reveals that in across the Kogi State institutions of higher learning there is, awareness, availability, utilization and impact of digital tools for teachers to teach, research and adopt during learning processes in the tertiary institutions in the state. In addition, finding also confirmed impact of digital tools in higher institution in the state. The most predominantly available digital tools across the higher institutions are: projectors/projector screen, flash drives and cameras and they are aware of the digital tools with high level of utilization among the

institutions of tertiary learning in the state. The Digital tools have shown very high impact on the institutions in the state. Test of hypotheses confirmed that there is no significant difference in the awareness, availability, utilization and impact of digital tools on the teaching of lecturers in tertiary institution in Kogi State during COVID 19 Pandemic era.

VIII. RECOMMENDATIONS

The study therefore recommended the followings:

1. Continuous development of digital tools to various institutions in Kogi State
2. Efforts by institutions sourcing grants to enrich their ICT centre
3. Partnerships and corroborations with agencies and individual for digital tools support program in the institution in Kogi State
4. Stakeholders participation to address technical and systematic barriers to the full integration digital tool in teaching.

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