INFORMATION AND COMMUNICATION TECHNOLOGY LITERACY COMPETENCY FOR KNOWLEDGE SHARING AMONG ACADEMICS IN SELECTED UNIVERSITIES IN NORTHERN STATES OF NIGERIA

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Abstract

This research was carried out to determine the Information and Communication Technology Literacy Competency for Knowledge Sharing among Academics in the Selected Universities in the Northern States of Nigeria. The objectives of the study include finding out the types of information and communication technologies (ICTs) academics utilize for knowledge sharing in the selected universities and determining the level of ICT literacy competency among academics for knowledge sharing in the selected universities in the Northern states of Nigeria. The study adopted a survey research method with the population of 3,260 academics out of which 326 academics were used as sample to collect data for the study using questionnaire as an instrument. Descriptive and inferential statistics were used to analyze the data collected. The study established among others that computers, printers, Internet, projector, power point, email, CD-ROM, handheld devices are the types of ICTs utilized for knowledge sharing among the academics and the level of ICT literacy competence among them is high in computer, handheld devices, digital camera, printer, Internet and email. Lecturers I and Assistant lecturers had the highest ICT competency literacy among the three levels of academics in theuniversities studied. The study recommended among others that only academics with information and communication literacy skills should be appointed and thus should be a policy for employers in the three universities studied; this would ensure that the academics utilize the ICT infrastructures recommended for the universities. The study concluded that the most advanced ICTs such as smart board, E-books, teleconferencing and video conferencing should be deployed with the provision of adequate training for the utilization of these facilities in knowledge sharing in the universities studied.

Keywords: Information & Communication Technology Literacy Competency, Knowledge Sharing, Academics, Universities

Introduction

Information and Communication Technology literacy of academics in Nigerian federal universities is a relative measure of their capacity to make appropriate use of ICT for information acquisition, organization, retrieval, sharing and dissemination. It also involves the level of skills they need to function in a web-based independently, and online learning environment. ICT literacy is a set of skills and understanding required by people to enable meaningful use of ICT appropriate to their needs. The literacy of an individual relatively measures the capacity to make appropriate use of ICT for teaching, learning and research purposes.

To live and work in the technology-enabled world of this second decade of 21st century, high-level skills in the use of information and communication technologies are essentials for all citizens (Abdurrahman, Shafiu, Mohammed and Liman 2018). These skills will make academics to find, access, manage and share knowledge between themselves and among students in a technological world. In support of the above statement, Murray (2010), and Wijaya and Sunrendro (2013) stressed that, ICT literacy is the access, management, integration, evaluation, creation, and communication of knowledge to other people within the technological world in a competent manner. Beyond mere possession of ICT skills, ICT literacy competency is an individual's proficiency in applying ICT as a solution to real-life problems. As universities are applying and using Information and Communication Technologies (ICT) to carry out their core functions in the areas of teaching, learning, and research, it is expected that the staff especially academics have strong skills and competencies needed to be able to utilize the myriad of technologies for carrying out such functions. It is also expected that they have a substantial level of knowledge, skills, and competencies needed for developing and maintaining information and communication technologies for the sharing of information and knowledge required by library users of 21st century. It has been asserted that a competency in a wide range of technologies and applications such as Intranets, knowledge portals, content, and document management systems, information retrieval engines, relational and object databases, electronic publishing systems, groupware and workflow systems, push technologies, help-desk applications, customer relationship management, data warehouse, data mining, business process reengineering, expertise networking, intelligent agents, conferencing, email, messaging, chat rooms, and knowledge creation applications have helped scholars at one time or another to manage share knowledge in teaching and research in institutions of learning.

Statement of the Problem

The application of Information and Communication Technology is now one of the most significant advancements experienced in the 21st century. This advancement explains why in the last few years, individuals, groups, institutions, and societies, depend primarily on the application of these technologies for competitive advantage. The use of information and communication digital technologies in this second decade of 21st century in our universities has made the world a global village where access and use of these information and communication technologies have become commonplace all due to influx of information. These technologies require academics to be skilled on how to use, access, communicate and share knowledge using these technologies.

However, as observed by the researchers, ICT literacy competency of academics especially in this technological age in the selected universities has been noticed to be very low, many of the academics seem to lack skills on how to operate the computer, access the email or interact through the internet, they also seem not to possess the skills to use the computer to obtain and share knowledge to their students via technological means but rather traditionally using the manual mode of sharing knowledge to the students which made most of the students not to concentrate. Oguche, 2017, reported that academics in Nigerians Universities are yet to effectively and efficiently use ICTs to share knowledge with colleagues and with students which affect their core functions of teaching and research. This was attributed to lack of ICT literacy competency because a lot of these technologies where provided for the use in teaching, learning and research in institutions of higher learning.

It is against this backdrop that this study will attempt to assess the ICT literacy competency for knowledge sharing among academics in selected Universities in the Northern States of Nigeria.

Research Questions

The following research questions were raised for the study.

1. What types of Information and Communication Technologies (ICTs) do the academics utilize for knowledge sharing in the selected universities in the Northern states of Nigeria?
2. What is the level of ICT literacy competence among academics for knowledge sharing in the selected universities in the Northern states of Nigeria?

Objectives of the Study

The objectives of the study are as follows.

1. To find out the types of Information and Communication Technologies (ICTs) academics utilize for knowledge sharing in the selected universities in the Northern states of Nigeria.
2. To determine the level of ICT literacy competence among academics for knowledge sharing in the selected universities in the Northern states of Nigeria.

HypothesisTested

There is no significant difference in the level of ICT literacy competence among academics for Knowledge Sharing in the selected Universities in the Northern States of Nigeria.

Literature Review

ICT literacy as a set of skills and understanding required by people to enable meaningful use of ICT appropriate to their needs so that information needs could be solved, Abdurrahman, Shafi'u, Muhammed and Liman(2018). ICT literacy skills comprise a 21st century form of literacy, in which research and communication of information via digital technology are as important as reading and writing were in the earlier centuries (Katz, 2005). For instance, in the year 2002, the Educational Testing Service (ETS) convened an international panel which comprised of academics, development specialists and telecommunications experts representing the governmental and private sectors to study the growing importance of existing and emerging ICT (Katz and Macklin, 2006; Pernia, 2008). The international panel defines ICT literacy as the ability to use digital technology, communications tools, and networks to access, manage, integrate, evaluate and create information to function in a knowledge-driven society (Kenney, 2006).

Oguche (2017) viewed ICT literacy as the set of skills and understanding required by people to enable meaningful use of ICT appropriate to their needs. For them, the ICT literacy of an individual is a relative measure of their capacity to make proper use of ICT for educational and learning purposes. According to Murray (2010), ICT literacy is the access, management, integration, evaluation, creation, and communication of ICT knowledge to other people. From a different perspective, Mohammed (2015) describe ICT literacy as the bridge between technical literacy and information literacy. That in technological literacy, an individual learns necessary skills in databases, word processing, and data presentation; while information literacy is access, evaluation and use of information through technology. In the words of Zammit (2010), mere possession of ICT skills does not equate to ICT literacy. Instead, an individual's proficiency in applying ICT as a solution to real-life problems is true ICT literacy. Rexwhite (2015) emphasized that ICT facilities, infrastructure, and applications such as World Wide Web, Face book, Twitter, YouTube, video and teleconferencing are catalysts for Knowledge sharing.

Sani (2017) opines that, information and communication technology literacy skills enable an individual to use computers, software applications, databases and other technologies to achieve a wide variety of academic, work-related, and personal goals. The skills enable

academics to share, process, manage and transfer knowledge for the benefit of the university system. Similarly, Linden and Adams (2009) observed that age differences regarding ICT use and skills may influence ICT literacy level and young people are more likely to be ICT users and more ICT literate than older age groups because older individuals are slower to respond to rapid change in technology and increased reliance on computers than younger individuals.

Research Methodology

A cross-sectional survey research design was used in conducting the study. The design is found suitable due to the scattered nature of the population across the three (3) selected universities in the Northern States of Nigeria, totaling about 3,260 out of which 326 was used as sample using proportionate and stratified random sampling technique to select the required number of academics which is in line with Neuman (2006) who stated that for equal accuracy, a researcher could choose 10 % of the population. The questionnaire was used as an instrument for data collection for this study, the instrument was subjected to face and content validity from research experts to determine the validity of the instrument. Descriptive statistics such as percentage, mean, standard deviation for research questions and inferential statistics were tested using ANOVA for the hypothesis.

Result and Discussion

From the 326 copies of the questionnaire distributed to the academics in the three selected Universities studied, 219 copies (67.2%) were duly completed, returned and found useful for the research. The response rate of the respondents by their status and institutions was presented in table 1

Table 1: Response Rate

S/N	ACADEMICS	UNIVERSITIES						TOTAL		
		ABU ZARIA		FUT MINNA		UMYU KATSINA		(QA)	(QR)	%
		(QA)	(QR)	(QA)	(QR)	(QA)	(QR)			
1	PROFESSORIAL CADRE	69	31	14	8	5	3	88	42	47.7
2	SENIOR LECTURER CADRE	34	21	13	11	8	5	55	37	67
3	LECTURER I-ASSISTANT LECTURER CADRE	117	89	33	21	33	30	183	140	76.5
TOTAL		**220**	**141**	**60**	**40**	**46**	**38**	**326**	**219**	**67.2**

KEY: (QA) Questionnaire Administered, (QR) Questionnaire Returned

Types of Information and Communication Technologies Utilised for Knowledge Sharing

In order to identify the types of information and communication technologies utilised for knowledge sharing in Teaching and Research activities in the among academics in the Universities studied in Nigeria, the respondents were asked to tick as many as possible from the options provided. The data collected in this regard were analyzed and presented in table 2

Table 2: The Types of Information and Communication Technology Utilised by the Academics for Knowledge Sharing in Teaching and Research Activities

S/N	Types of ICTS	UNIVERSITIES									Averages								
		ABU ZARIA			FUT MINNA			UMYU KATSINA			Total			MEAN			SD		
		PC	SLC	LI-ASLC	PC	SLC	LI-ASLC	PC	SLC	LI-ASLC	PC	SLC	LI-ASLC	PC	SLC	LI-ASLC	PC	SLC	LI-ASL
1	Computer	22	19	76	7	6	21	2	3	11	31	28	108	2.65	2.57	2.60	0.18	0.10	0.03
2	Hand Held Devices	12	9	35	2	3	12	2	4	4	16	16	51	2.63	2.31	2.61	0.38	0.22	0.08
4	Projector	6	11	60	5	6	19	1	3	5	12	20	84	2.42	2.40	2.65	0.32	0.03	0.08
5	Smart board	7	7	44	6	1	15	1	2	6	14	10	65	2.43	2.50	2.58	0.36	0.89	0.05
6	Teleconferencing facilities	1	4	14	1	0	4	0	0	4	2	4	22	2.50	3.00	2.45	0.00	0.12	0.16
7	Video conferencing facilities	3	5	6	1	0	0	1	1	3	5	6	9	2.40	2.67	2.33	0.58	0.13	0.16
8	Digital Camera	4	7	29	2	2	5	1	3	3	7	12	37	2.43	2.33	2.70	0.14	0.36	0.16

9	Scanner	15	9	44	6	2	14	3	2	5	24	13	63	2.50	2.54	2.62	0.08	0.35	0.07
10	Printer	21	12	50	4	3	21	2	0	6	27	15	77	2.70	2.80	2.57	0.21	0.00	0.05
11	Videos	14	8	42	3	3	13	1	2	5	18	13	60	2.72	2.46	2.62	0.39	0.15	0.07
12	Internet	20	16	76	4	5	21	3	3	8	27	24	105	2.63	2.54	2.65	0.18	0.11	0.04
13	Power point	7	11	56	5	5	21	2	4	3	14	20	80	2.36	2.35	2.66	0.05	0.08	0.15
14	You tube	1	13	44	2	1	16	0	2	3	3	16	63	2.33	2.69	2.65	0.14	0.95	0.14
15	Email	12	16	57	4	5	21	2	3	6	18	24	84	2.56	2.54	2.61	0.14	0.11	0.06
16	E books	12	10	43	4	4	15	1	3	4	17	17	62	2.65	2.41	2.63	0.38	0.11	0.09
17	Webcam	1	3	21	2	2	6	0	0	4	3	5	31	2.33	2.60	2.55	0.23	0.37	0.10
18	Social media	5	12	56	4	4	16	1	1	5	10	17	77	2.40	2.65	2.66	0.26	0.38	0.07
19	CD-ROM	22	19	76	7	6	21	2	3	11	31	28	108	2.65	2.57	2.60	0.18	0.10	0.03
20	Modem	12	9	35	2	3	12	2	4	4	16	16	51	2.63	2.31	2.61	0.38	0.22	0.08
21	Public Address System	14	11	60	5	6	21	1	4	5	20	21	86	2.65	2.33	2.64	0.41	0.04	0.08

KEY: **PC,** Professorial Cadre**, SNL**-Senior Lecturer Cadre**, LI-ASL**-Lecturer I-Assistant Lecturer Cadre

Table 2 showed that computer, handheld devices, scanners, printers, Internet, Email, CD-ROM, were the significance information and communication technologies utilized in all the universities studied with the mean score between 2.50 and 3.00 responses. This suggests that such type of ICTs have significance effects on the respondents' teaching and research activities in the universities studied. However, a careful look at Table 2 showed that respondents in the category of Lecturer I to Assistant Lecturer cadre used smartboards, social webcam in sharing knowledge for teaching and research activities with the mean score of 2.50 to 2.68 across the three universities studied. In contrast, use of public address system, modem, videos in sharing was more prominent among academics in the universities surveyed in the professorial and lecturer I to assistant lecturers' cadre with the mean of more than 2.50 and above.

A curious look at table 2 showed that out of the twenty (20) ICT facilities utilized for knowledge sharing in the universities studied, projector, PowerPoint and the digital camera was only used by a Lecturer I to Assistant Lecturers' cadre with a mean score of 2.50 and above but it was the responses of professors cadre that don't use YouTube because the mean score was less than 2.50 which shows that the technology is not significance for the group in teaching and research activities. Still on responses of Senior Lecturers and Lecturer II to Assistant Lecturer cadre showed that their responses were with a mean score of 2.50 and above which means it is significance in term of teaching, and research activities in all the universities studied. From the table, one would critically notice that the Senior Lecturers and Lecturer I to Assistant Lecturers' are the group that utilized most of ICTs in sharing teaching and research activities compared to the types of ICTs that are used for knowledge sharing in teaching and research activities by professorial cadre. This finding is in variance with the result of Rexwhite (2015) who stated that ICT facilities, infrastructure, and applications such as World Wide Web, Face book, Twitter, YouTube, video and teleconferencing are catalysts for Knowledge sharing. The above finding implies that unless universities provided ICTs infrastructure and ensure utilization of such, knowledge sharing will continue to suffer in the area of teaching and research, especially in this knowledge era.

The Academic Level of ICT Literacy Competencies for Knowledge Sharing

In an attempt to ascertain the academics level of Information and Communication Technology literacy competencies among academics in the Universities studied in Nigeria, the respondents were asked to indicate the level of ICT literacy competencies as it relates to knowledge sharing. The collected data in this regard was analyzed and presented in table 3

Table 3: The Academics Level of ICT Literacy Competencies for Knowledge Sharing

S/N	ICTS	Level of ICT literacy competencies for knowledge sharing																		Averages					
		VC			C			PC			NC			U			Total			MEAN			SD		
		PC	SLC	LI-ASL	PC	SLC	LI-ASL	PC	SLC	LI-ASL	PC	SLC	LI-ASL	PC	SLC	LI-ASL	PC	SLC	LI-ASL	PC	SLC	LI-ASL	PC	SLC	LI-ASL
1	Computer	17	15	80	12	11	47	6	4	6	2	3	2	5	4	5	42	37	140	3.81	3.81	4.39	0.32	0.21	0.39
2	Handheld	9	8	46	17	14	28	9	3	17	3	5	23	4	7	26	42	37	140	3.57	3.30	3.32	0.19	0.31	0.05
3	Projector	9	7	59	11	16	61	3	1	12	3	7	6	16	6	2	42	37	140	2.86	3.11	4.21	0.35	1.31	0.18
4	Smart board	2	6	49	1	7	44	9	11	22	4	11	8	26	2	17	42	37	140	1.79	2.68	3.71	1.71	0.30	0.07
5	Teleconferencing facilities	1	3	21	6	5	22	7	14	36	16	7	41	12	8	20	42	37	140	2.24	2.43	2.88	2.10	0.67	0.09
6	Video conferencing facilities	3	3	26	9	1	26	13	6	11	14	25	23	3	3	54	42	37	140	2.88	3.54	2.62	0.63	1.76	0.10
7	Digital Camera	12	5	33	14	19	44	6	7	32	3	3	15	7	3	16	42	37	140	3.50	3.19	3.45	0.20	0.34	0.04
8	Scanner	5	8	33	13	7	43	6	12	36	9	4	12	9	6	16	42	37	140	2.90	3.76	3.46	0.35	0.17	0.05
9	Printer	11	14	55	21	11	48	3	5	12	5	3	11	2	4	14	42	37	140	3.81	3.32	3.85	0.30	0.16	0.08
10	Videos	9	8	37	13	11	49	8	9	32	5	3	12	7	6	10	42	37	140	3.29	3.51	3.65	0.15	0.17	0.03

11	Internet	13	11	77	17	15	40	8	0	11	2	4	4	2	7	8	42	37	140	3.88	3.16	4.24	0.30	2.11	0.18
12	Power point	3	13	63	7	7	46	0	2	19	21	3	7	11	12	5	42	37	140	2.29	3.19	4.11	1.14	0.49	0.09
13	You tube	5	8	33	13	7	43	6	12	36	9	4	12	9	6	16	42	37	140	2.90	3.81	3.46	0.35	0.17	0.05
14	Email	17	15	81	12	11	46	6	4	6	2	3	2	5	4	5	42	37	140	3.81	3.16	4.40	0.32	0.21	0.39
15	E books	4	8	32	14	7	44	6	11	37	8	5	10	10	6	17	42	37	140	2.86	2.68	3.46	0.46	0.16	0.06
16	Webcam	1	3	20	6	5	41	7	14	36	16	7	22	12	8	21	42	37	140	2.24	3.19	3.12	2.10	0.67	0.08
17	Social media	5	8	31	13	7	45	6	12	36	9	4	11	9	6	17	42	37	140	2.90	3.30	3.44	0.35	0.17	0.05
18	CD-ROM	9	7	59	11	16	61	3	1	12	3	7	6	16	6	2	42	37	140	2.86	3.16	4.21	0.35	1.31	0.18
19	Modem	0	13	63	10	7	46	0	2	19	21	3	7	11	12	5	42	37	140	2.21	1.00	4.11	2.03	0.49	0.09
20	Others	2	0	0	0	0	2	0	0	1	0	0	0	40	37	137	42	37	140	1.19	1.00	1.06	1.09	0.00	0.11

KEY: VCPT-Very Competent, CPT-Competent, PCPT-Partially Competent, NCPT-Not Competent, UD-Undecided, PC, Professorial Cadre, SNL-Senior Lecturer Cadre, LI-ASL-Lecturer I-Assistant Lecturer Cadre

The level of ICT literacy competencies, as identified in Table 3, concerning the use of ICTs among academics for knowledge sharing.

Table 3 presented the respondents' responses to the level of ICT literacy competencies use for knowledge sharing among academics for teaching and research activities. It can be deduced from the table that ICT literacy competencies with average mean scores of 3.50 and above for all the academics at Professorial cadre, was the computer, handheld devices, digital camera, printer, videos, Internet, Email. Whereas, ICT competencies for senior lecturers' cadre with the average mean of 3.16 up to 3.81 was in the computer, handheld devices, projector, video conferencing facilities, digital camera, scanner, printer, videos, Internet, PowerPoint, YouTube, Email, Webcam, Social media and CD ROM. As for the Lecturer I cadre down through Assistant Lecturers' cadre, it can be deduced that their ICT literacy competencies level were on the use of the computer, handheld devices, projector, Smartboard digital camera, scanner, printer, videos, Internet, PowerPoint, YouTube, Email, Webcam, Social media and CD ROM with the average mean score of 3.12 up to 4.40. It can thus be argued that the academics ICT literacy competencies have a high effect on knowledge sharing among the academics for knowledge sharing in all the universities studied. Having knowledge, skills and competencies on the use of the ICTs enhance their teaching and research activities efficiently and effectively among the academics as it will improve the sharing of the knowledge among peers in the university system. This finding is in agreement with that Oguche (2017) who discovered in an earlier survey on the impact of ICT literacy competencies that ICT competence of the academics in Nigerian Universities was moderate.

The ICT literacy of the academics with an average mean of 2.00 and below was the smart board, teleconferencing facilities, video conferencing facilities, scanner, PowerPoint, YouTube, E-books, Webcam, social media, CD-ROM and Modem. The respondents seem to have low ICT literacy competencies among all the academics in the universities studied because the average mean was between 1.00 to 2.24, which would affect the use of ICTs for knowledge sharing. The finding is in agreement with the discovery of Rex white (2015) who in an earlier survey on the use of ICTs for knowledge management discovered that, academics ICT literacy competence on Video conferencing and teleconferencing facilities were below average.

Looking at table 3 carefully, it showed that out of twenty (20) ICTs listed, ICT literacy on Modem and others (Senior lecturers' cadre) smart board and others (Professors cadre) were below 2.00 which indicated that not all the academics are competent in the use of ICTs for knowledge sharing. This finding was in support of the result of Linden and Adams (2009) who observed younger academics are more likely to be ICT literate and competent than the senior academics because the later are slow in responding to rapid change in technology. This means that a lot of training and retraining is needed for the top scholars to equip themselves with the necessary skills and competencies to cope with the reality of the 21st century digital world.

Hypothesis1: There is no significant difference in the level of ICT literacy competence among the academics for knowledge sharing in the selected universities in the Northern States of Nigeria.

Table 4 Analysis of Difference on the Academics Level of Literacy Competence for Knowledge Sharing

Responses	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	355.090	2	177.545	2814.462	.000
Within Groups	127.239	2017	.063		
Total	482.329	2019			

Tabke4 **s**howed that the F value is 2814.462 and the p-value is .000, and this is less than alpha=0.05. Hence the null hypothesis one is rejected. It can, therefore, be said concluded that there is significance difference in the ICT literacy competence for knowledge sharing among the academics in the selected northern universities studied. This implies that among the three cadres of academics studied, and some were found to be more competent in ICTs than others.

Table 4(b) showed the result of the Post hoc multiple comparisons on the mean scores of the different universities studied.

Table 4(b): A Post hoc Sheaf Test of multiple comparisons on the ICT literacy competence of the academics in the selected universities studied.

Dependent Variable: Level of ICT Literacy Competency for Knowledge Sharing

(I) Universities	(J) Universities	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
ABU ZARIA	FUT MINNA	-.89605*	0.0135	.000	-0.9276	-0.864
	UMYU KATSINA	-.89605*	0.0195	.000	-0.9419	-0.85
FUT MINNA	ABU ZARIA	.89605*	0.0135	.000	0.8644	0.9276
	UMYU KATSINA	.00000	0.0217	1.000	-0.0509	0.0509
UMYU KATSINA	ABU ZARIA	.89605*	0.0195	.000	0.8502	0.9419
	FUT MINNA	.00000	0.0217	1.000	-0.0509	0.0509

The Post Hoc table 4(b) showed that from all comparison, there is a significant difference among and between the respondents on their level of ICT literacy competence for knowledge sharing in the universities studied. The values with an asterisk indicated the variations of the respective mean scores. From the table, the first row showed that there are significant mean differences between Ahmadu Bello University Zaria lecturers' responses on the level of ICT literacy competence on knowledge sharing when compared with the Federal University of Technology Minna and Ummaru Musa Yaraduwa University Katsina. Second two showed that the mean difference between Federal University of Technology, Minna lecturers' responses on their level of ICT literacy competence for knowledge sharing when compared with Ahmadu Bello University, Zaria. However, the result showed that no difference in the mean when compared with Ummaru Musa Yaraduwa University, Katsina. The third row of the table equally showed the mean difference between Ummaru Musa Yaraduwa University, Katsina lecturers' responses on their level of ICT

Literacy competence for knowledge sharing when compared with Ahmadu Bello University, Zaria and it showed no difference in the mean when compared with Federal University of Technology, Minna. Base on this result, the hypothesis which stated that there is no significant difference in the level of ICT literacy competence among academics for knowledge sharing in the universities in the Northern States of Nigeria was rejected. This implies that the ICT literacy competencies has significance effect on knowledge sharing when carrying out teaching and research activities. It can thus be concluded that academics in the universities studied were not using ICTs based on their ICT literacy competencies for knowledge sharing in the course of carrying out their teaching and research activities.

Summary of the Major Findings

Based on the data collected and analyzed for this study, the following are the major findings:

1. The types of ICTs utilized for knowledge sharing are computers, printers, Internet, projector, PowerPoint, email, CD-ROM, handheld devices, among the academics in the selected universities studied.
2. The level of ICT literacy competence among academics is high in computer, handheld devices, digital camera, printers, Internet and email. The Lecturers I and Assistant Lecturer had the highest ICT competence literacy among the three levels of academics in the three universities studied.
3. That there is a significant difference in the level of ICT literacy competence among academics for knowledge sharing in the universities studied.

Conclusion

From the analysis and discussion of the findings, it could be concluded that academics in the universities studied have, to some extent, endeavored to apply Information and Communication Technology in carryin out their primary functions of teaching and research. This could be deduced from the types of ICTs utilized for knowledge sharing. However, the academics in the universities studied, especially the senior lecturers and professors do not effectively apply these ICTs, which was attributed to their moderate ICT literacy competency. It would be for the betterment of the universities studied to deployother means by looking for donor agencies to support them in providing adequate ICT infrastructures and regular training and retraining to academics, especially the seniorlecturers and above so that they get acquainted with the 21st century trends of sharing knowledge in the discharging their duties using Information and Communication Technologies.

Recommendations

The following are the recommendations of the study:

1. There is an urgent need for the increased provision ICTs to the academics that could facilitate knowledge sharing in their routine academic activities especially smart boards, E-books, teleconferencing and video conferencing facilities free to the academics, or at-least at subsidized rates. This in addition to the provision of viable Internet facilities.
2. Appointing only academics with Information and Communication literacy skills should be a policy to all employees especially in the universities. This would go encourage the academics to utilize the ICTs infrastructures recommended for the universities. Also, to the academics that are already in the system, training and retraining on the use of these facilities should be organized so that theuniversities studied would keep phase with the global trends in teaching, learning and research activities.

References

Abdurrahman, J. Shafi'u, S. Muhammed, J. & Liman, A.S., (2018), Assessment of digital literacy of academic librarians in Ahmadu Bello University Library Complex A.B.U. Zaria, Nigeria, Nigerian Libraries

Katz, I. R. (2005). "Beyond technical competence: literacy in information and communication technology". *Educational Technology Magazine* 45(6) pp. 44-77

Katz, I. R., and Macklin, A. S. (2006). "Information and Communication Technology (ICT) literacy: Integration and assessment in higher education". *Journal of Systemics,Cybernetics and informatics* 5(4) pp. 42-50

Kenney, A. J. (2006). "The final hurdle? A new test may finally bring information literacy the recognition it deserves". *School Library Journal* 62-65. available at: http://www.schoollibraryjournal.com/article (accessed 11 January 2015)

Linden, R. and Adams, S. (2009), "Technological change: its effects on the training and performance of older employees, in Gomez-Mejia, L. and Lawless, M. (Eds.), *Advances inGlobal High-Technology Management*, JAI Press, Greenwich

Mohammed, Z.(2015). Application of information and communication technology to education, training and research in library & information science schools in Nigeria. A Lead Paper presented at the 3rd AFRICAN LIBRARY SUMMIT, ACCRA Ghana, May 30th- 2nd June. Retrieved via http://hdl.handle.net/123456789/6670 in May 2017

Murray, J. (2010).Testing information literacy skills (grades k-12): information skills for student achievement. Accessed Nov 10, 2017, from http://www.big6.com/showarticle.php

Oguche, D., (2017) Impact of information and communication technology (ICT) literacy competence on job performance of librarians in Federal University Libraries in Nigeria, *The Information Technologist* 13.(1) June, 2017

Pernia, E. E. (2008). *Strategy framework for promoting ICT literacy in the Asia-Pacific region*. Publication of UNESCO Bangkok communication and information unit. Asiaand Pacific Regional Bureau for Education, Bangkok 10110, Thailand. Available at:http://portal.unesco.org/ci/en/ev.phpRL_ID=27445&URL_DO=DO_TOPIC&URL_SECTION=201.html (Accessed 15 March 2014)

Rexwhite, T.E., (2015). The Use of Information and Communication Technology for the Support of Knowledge Management in Selected Academic Libraries in Nigeria and South Africa. Unpublished Thesis Submitted to the Department of Information Studies, University of Zulu Land, Kwadlangezwa, South Africa via http://www.uzulu.ac.za on July 2017

Sani, M.R., (2017). Exploring the Perception of Sabon Gari Local Government Market Women on the Use Information And Communication Technology (ICT) in their Business. Samaru Journal of Information Studies Retrieved on 2nd May, 2017 from http://www.ajol.info/index.phb/sjis

Wijaya, S. and Sunrendro, K. (2013) ICT literacy as an indicator of e-government Readiness. Paper presented to the school of electrical and informatics Engineering. Banding Institute of Technology. Accessed Dec 21, 2017, http://www.usd.ac.ld/06/publidosen/wisnu-ti/ict.pdf

Zammit, L. (2010). ICT Literacy and Education in Malta, Retrieved at http://www.mirac.edu/literacy/education/zam.pdf