
Utilization of Information and Communication Technologies (ICTs) Among Basic Rural Secondary School Teachers in Katsina State, Nigeria

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DOI: <https://doi.org/10.37745/bjmas.2022.0079>

Published: 28th November, 2022

ABSTRACT: *The study was conducted in Katsina State with the aim of finding out the extent of utilization of information and communication technologies (ICTs) among basic rural secondary school teachers. Multi-stage sampling procedure was used to sample 260 teachers; structured interview schedule was employed to capture their thoughts on socio-economic characteristics, sources of information, awareness, access, ICTs utilization and constraints. Descriptive (frequency counts, percentages, mean and standard deviation) and inferential statistics (Chi square and Pearson Product Moment Correlation PPMC) were instruments of data analysis. Teachers were mostly males (85.8%), NCE/BED (97.7%) holders with mean age of 34 years and 9 years of working experience. Television ($\bar{x} = 2.35$) and internet ($\bar{x} = 2.31$) were major sources of information with 60.85% having high level of ICTs awareness. Mobile phone ($\bar{x} = 2.08$) and internet ($\bar{x} = 1.76$) were most accessed ICTs with 53.8% having low level of access to ICTs. Mobile phone ($\bar{x} = 1.71$), newspaper ($\bar{x} = 1.52$) and radio ($\bar{x} = 1.50$) as ICTs were mostly utilized. Most (52.3%) teachers had low level of ICTs utilization. Benefits derived were mostly motivation of students ($\bar{x} = 2.45$) and facilitating knowledge sharing with colleagues ($\bar{x} = 2.42$). Levels of benefits derived (60.4%) and constraints were high and low respectively. Information ($r = 0.330$), awareness ($r = 0.357$), benefits ($r = 0.162$), access ($r = 0.770$) significantly correlated with respondents' level of ICTs utilization. Level (52.3%) of ICTs utilization was low notwithstanding that mobile phone; internet, newspaper and radio were mostly utilized.*

KEYWORDS: information, communication technologies, awareness, access, utilization, benefits

INTRODUCTION

The potentials of Information and Communication Technology (ICT) in making education in developing countries effective appear unassailable. ICTs involve all technologies that facilitate communication, the processing and transmission of information by electronic means (CTA 2003). This interpretation accommodates the full range of ICT, from radio and television to telephones (fixed and mobile), computers and internet.

From the definitions also, most electronic based communication systems conveniently fit into the description of ICT with a good number of them combining well to form network that reaches

virtually every nooks and crannies of the world (UNDP 2001). Thus; their availability and utilization are seemingly assuming a common trend in most societies and educational system in particular. Such upsurge in usage has in recent times also been observed to be spreading gradually into almost all areas of rural life despite the lingering constraints of access, connectivity, literacy, content and cost (CTA 2003). Brakel & Chisenga, (2003) Nwagwu & Ahanihe (2006) have also noted the rapid evolving rate of ICT since mid-20th century, its convergence and pervasiveness. This was confirmed by (UNDP 2006, Yusuf 2005) who attributed the spread to ICTs roles in promoting participating in global markets, political accountability; delivery of basic services; and enhancing of teaching, learning, and research as well as development opportunities in rural areas. In programmed instruction, ICTs also plays formidable roles. Programmed instruction refers to a self-instructional technique that presents experience sequentially and logically such that a learner interacts with them in a predetermined order (Olibie 2008). Akinyemi (1998) in corroboration observed that with programmed lessons in the ICT, slow learners are availed the privilege to severally go through a lesson with remarkable understanding. Olakulehin (2007) also revealed that teaching pedagogy through the application of ICT has the advantage of heightening the motivation; helping recall previous learning; providing new instructional stimuli; activating the learner's response; providing systematic and steady feedback; facilitating appropriate practice; sequencing learning appropriately; and providing a viable source of information for enhanced learning. Thus teachers who use this system of instructional strategy would be able to kindle in the hearts of the learners a desirable attitude towards ICT tools in their entire way of life.

The robust role in our fast changing world implies that everyone not just teachers and students are in need of ICTs and utilization. Perhaps, the realization of this role could be the major factor that necessitated organizations, Local, States and Federal Governments to train and establish ICTs facilities and re-train their employees (Adomi & Anie, 2006). For instance, African Ministries of Education including Nigeria took a more proactive step in coordinating and leading the development of ICT infrastructure in school systems. In June 2003, at the African Summit of the World Economic Forum held in Durban, South Africa, the New Partnership for African Development (NEPAD) launched the e-Schools Initiative, intended to equip all African high schools with ICT equipment including computers, radio and television sets, phones and fax machines, communication equipment, scanners, digital cameras, and copiers, among other things (Esharennana & Kpangban 2010). The Federal Ministry of Education also launched an ICT-driven project know as School Net (www.snng.org) (FGN 2006; Adomi 2005; Okebukola, 2004), which was intended to equip all schools in Nigeria with computers and communications technologies. Unfortunately, despite these efforts, most secondary schools in Nigeria (public and private) do not have robust ICT training programmes (Goshit 2006). This is one of the reasons why Nigeria ranked 90th in terms of degree of ICTs preparedness and utilization out of a total of 115 surveyed countries (Global Information Technology 2005). United States of America topped the list, followed by Singapore, Denmark, Iceland, Finland, Canada, Taiwan, Sweden, Switzerland and the United Kingdom. The low rate has also been attributed to inadequate ICT skilled manpower in schools,

school administrators/teachers' poor perception, inadequate facilities, frequent electricity interruption and poor maintenance culture (Esharennana and Kpangban 2010).

However, because the low rate of ICTs utilization in Nigeria as x-rayed above is a generalized one; it may not be good enough using it to adjudge individual states of the federation. Consequently, the situation as it is in Katsina State requires investigation. It is against this background that the study tries to examine the utilization of ICTs among rural basic secondary school teachers in the state.

Specific objectives

The specific objectives included:

1. Identify teachers' level of awareness on ICT in the area
2. Ascertain teachers' source of information on ICT in the area
3. Find out teachers' level of access to ICT in the area
4. Examine teachers' level of utilization of ICT in the area
5. Identify respondents' constraints to ICT utilization in the area

METHODOLOGY

The study was conducted in Katsina state located in the North west geo-political zone of Nigeria. The population of the study consisted of all rural basic secondary school teachers in the State. Multistage sampling procedure was used in selecting the respondents. A total 16 LGAs of the 34 LGAs of the state were purposively selected. Of this 16 LGAs, 12 LGAs (75%) were selected using simple random sampling technique. Three rural schools from each of the twelve sampled LGAs were also randomly selected to give 36 schools. Using systematic random sampling technique, 8 teachers were selected from the list of teachers in each of the 36 sampled schools, resulting in a sample of 288. Although, 260 copies of the instrument were returned, filled correctly and used for the study.

A structured questionnaire containing questions on respondents' socio-economic characteristics, sources of information, awareness, access, utilization of ICT and constraints was used to collect data. Sources of information was measured on a 4 – point scale of always (3), occasionally (2) rarely (1), Never (0) while constraints to ICTs utilization was also measured on 4 – point scale of very severe (3), severe (2), not severe (1) not a constraint (0). Each respondent's score was generated based on constraints faced and the level of severity of such constraints. Respondents' awareness was measured using a list of awareness statements which they responded freely. Respondents with right responses were awarded 1 and wrong 0. A total score was obtained and respondents who scored below the mean value were adjudged to have low awareness, while those whose awareness score equals or greater that the mean score were adjudged to have high level of awareness. Access to ICT was measured on a 4-point scale of always, occasionally, rarely, and

never with scores of 3, 2, 1, and 0 assigned respectively. Level of utilization was measured on 4-point scale of always (3), occasionally (2), rarely (1) and never (0). The mean score was determined and used to categorize the respondents into high (scores of mean and above mean) and low (for scores below mean) in terms of utilization of ICT. Descriptive statistics such as frequency counts, percentages, and means was used to describe the data while Chi square and PPMC were used to determine the relationship between the independent variables and dependent variable.

RESULTS AND DISCUSSION

Personal characteristics of the respondents

Table 1 shows that majority (45.8%) of the respondents fall within less or equal 30 years with the mean age of 34 years. Also shown in Table 1 is that 39.2% of the teachers have a mean age of 9 years teaching experience. Table 1 further revealed that 85.8% of the teachers were males as against 14.2% female. Majority (97.7%) possessed NCE/B.ED certificate.

Table 1: distribution of respondents' based on personal characteristics

Personal characteristics	F	%	Mean
Age:			34.3580 ± 9.11752
less or equal 30	122	46.9	
31-40	77	29.6	
41-50	43	16.5	
above 50	18	6.9	
Years of experience:			8.9923 ± 7.45229
1-5	102	39.2	
6-10	75	28.8	
11-15	35	13.5	
16-20	23	8.8	
above 20	25	9.6	
Gender:			
Male	223	85.8	
Female	37	14.2	
Educational qualification:			
OND/HND	1	.4	
NCE/BED	254	97.7	
M.Sc/PhD	5	1.9	

Source: Field Survey,

Awareness of ICTs

The result in Table 2 shows that most teachers were aware that newspaper (93.8%) radio (93.5%), mobile phone (93.1%), television (92.7%), computer (90.8%), internet (88.5%) Video/audio CD/CD/cassette (87.7%) and e-mail (87.3%) were ICT devices. Other ICTs the respondents were aware of included journals (85.0%), posters (80.8%), digital camera (77.3%), newsletter (70.4%), CD rom (66.2%), data projector (63.5%), bulletin (70.4%) and electronic books (55.8%). Table 2b is a summary of respondents' level of awareness on ICTs in the area. The result revealed that 60.8% of the respondents had high level of awareness on ICTs.

Table 2a: distribution of respondents based on awareness of ICTs

ICTs	Aware		Not aware	
	F	%	F	%
1 CD ROM	172	66.2	88	33.8
2 E-mail	227	87.3	33	12.7
3 Internet	230	88.5	30	11.5
4 Electronic billboard adverts	144	55.4	116	44.6
5 Electronic books	145	55.8	115	44.2
6 Computers	236	90.8	24	9.2
7 Video/audio CD/CD/cassette	228	87.7	32	12.3
8 Mobile phone	242	93.1	18	6.9
9 CCTV	133	51.2	127	48.8
10 Digital camera	201	77.3	59	22.7
11 Data projector	165	63.5	95	36.5
12 Fax	118	45.4	142	54.6
13 Television	241	92.7	19	7.3
14 Radio	243	93.5	17	6.5
15 Newspaper	244	93.8	16	6.2
16 Journals	221	85.0	39	15.0
17 Posters	210	80.8	50	19.2
18 Bulletin	159	61.2	101	38.8
19 Newsletters	183	70.4	77	29.6
20 GIS	77	29.6	183	70.4

Table 2b: Respondents' level of awareness of ICTs

Level of utilization	F	%	Minimum score	Maximum score	Mean score	Standard deviation
Low (< mean)	102	39.2	.00	20.00	14.6885	4.67548
High (≥ mean)	158	60.8				
Total	260	100				

Source of information

The result in Table 3 shows that internet (58.5%), radio (58.5%) television (58.5%), friends (46.2%), newspaper (43.5%) and educational institutions (36.9%) always provided information to most respondents. On the overall television (mean = 2.35), internet (mean = 2.31), friends (mean = 2.30) and colleagues (mean =2.14) ranked 1st, 2nd, 3rd and 4th respectively as respondents' sources of awareness on ICT in the area.

Table 3: distribution of respondents based on source of information

Sources of information	Always		Occasionally		Rarely		Never		Mean	Rank
	F	%	F	%	F	%	F	%		
Friends	120	46.2	111	42.7	17	6.5	12	4.6	2.30	3 rd
Colleagues	111	42.7	98	37.7	27	10.4	24	9.2	2.14	4 th
Internet	152	58.5	60	23.1	24	9.2	24	9.2	2.31	2 nd
Newspaper	114	43.8	82	31.5	41	15.8	23	8.8	2.10	5 th
Computer training institution	51	19.6	83	31.9	46	17.7	80	30.8	1.40	8 th
Educational institutions	96	36.9	83	31.9	35	13.5	46	17.7	1.88	6 th
Television	152	58.5	66	25.4	23	8.8	19	7.3	2.35	1 st
Radio	62	23.8	81	31.2	47	18.1	70	26.9	1.52	7 th
Workshop/seminars	32	12.3	87	33.5	53	20.4	88	33.8	1.24	9 th

Access to ICTs

The finding on respondents' access to ICTs as shown in Table 4a revealed that respondents had access to different ICTs at different scales. The result shows that most respondents weekly accessed mobile phone (61.0%), radio (47.7%), internet (40.8%), television (40.0%), and video/audio CD/CD/cassette (38.8%). Other ICTs respondents accessed weekly were newspaper (35.8%) and computer (34.2%). Also revealed in Table 4 is that majority (76.25%, 74.6%, 56.9%, 55.8%, and 55.4%) of the respondents never accessed GIS, fax, electronic books, data projector and electronic billboard adverts. Other ICTs most respondents never accessed were bulletin (53.8%), newsletter (51.2%) and digital camera (49.2%). The result further indicated that mobile phone (mean = 2.08) and internet (mean = 1.76) ranked 1st and 2nd respectively as major ICTs the teachers accessed. These were followed by newspaper (mean = 1.67) and computer (mean = 1.65) that ranked 3rd and 4th respectively. Table 4b further gives the summary of respondents' access to ICTs. The result revealed that majority (53.8%) of the teachers had low access to ICTs in the area.

Table 4a: distribution of respondents based on access to ICTs

ICTs	Weekly		Monthly		Anytime		Never		Mean	Rank
	F	%	F	%	F	%	F	%		
CD ROM	43	16.5	60	23.1	34	13.1	123	47.3	1.09	9 th
E-mail	83	31.9	63	24.2	27	10.4	87	33.5	1.55	6 th
Internet	106	40.8	59	22.7	20	7.7	75	28.8	1.76	2 nd
Electronic billboard adverts	27	10.4	49	18.8	40	15.4	144	55.4	.84	14 th
Electronic books	41	15.8	45	17.3	26	10.0	148	56.9	.92	11 th
Computers	89	34.2	71	27.3	20	7.7	80	30.8	1.65	4 th
Video/audio CD/CD/cassette	101	38.8	49	18.8	24	9.2	86	33.1	1.64	5 th
Mobile phone	160	61.6	26	10.0	7	2.7	67	25.8	2.08	1 st
CCTV	29	11.2	47	18.1	20	7.7	164	63.1	.77	15 th
Digital camera	47	18.1	54	20.8	31	11.9	128	49.2	1.08	10 th
Data projector	29	11.2	54	20.8	32	12.3	145	55.8	.87	13 th
Fax	23	8.8	17	6.5	26	10.0	194	74.6	.50	17 th
Television	104	40.0	43	16.5	15	5.8	98	37.7	1.59	6 th
Radio	124	47.7	34	13.1	16	6.2	86	33.1	1.76	2 nd
Newspaper	93	35.8	62	23.8	32	12.3	73	28.1	1.67	3 rd
Journals	51	19.6	71	27.3	35	13.5	103	39.6	1.27	8 th
Posters	60	23.1	69	26.5	28	10.8	103	39.6	1.33	7 th
Bulletin	41	15.8	53	20.4	26	10.0	140	53.8	.98	10 th
Newsletters	37	14.2	54	20.8	36	13.8	133	51.2	.98	10 th
GIS	22	8.5	26	10.0	14	5.4	198	76.2	.51	16 th

Table 4b: Respondents' level of ICTs access

Level of ICTs access	F	%	Minimum score	Maximum score	Mean score	Standard deviation
Low (< mean)	140	53.8	.00	60.00	24.8308	16.97995
High (≥ mean)	120	46.2				
Total	260	100				

Utilization of ICTs

Table 5a shows that mobile telephone (51.5%), radio (45.8%) and newspaper (42.7%) were ICTs most teachers utilized daily. On the other hand fax (80.8%), GIS (79.6%), CCTV (74.2%), electronic billboard (70.8%), data projector (63.1%) and electronic books (65.8%) were never used by majority of the respondent. In the same vein, bulletin (65.0%), CD Rom (62.7%), newsletter (62.3%) and posters (53.5%) were never utilized by the respondents. The result further revealed that utilization of mobile phone (mean = 1.71), newspaper (mean = 1.52), radio (mean = 1.50) internet (mean = 1.44) ranked 1st, 2nd, 3rd and 4th respectively. However, the result in Table 5b showed that utilization of ICTs by majority (52.3%) to be low.

Table 5a: distribution of respondents based on utilization of ICTs

ICTs	Daily		Weekly		Monthly		Never		Mean	Rank
	F	%	F	%	F	%	F	%		
CD ROM	34	13.1	26	10.0	37	14.2	163	62.7	.74	14 th
E-mail	79	30.4	21	8.1	34	13.1	126	48.5	1.20	7 th
Internet	104	40.0	16	6.2	31	11.9	109	41.9	1.44	4 th
Electronic billboard adverts	22	8.5	24	9.2	30	11.5	184	70.8	.55	17 th
Electronic books	34	13.1	23	8.8	32	12.3	171	65.8	.69	15 th
Computers	92	35.4	21	8.1	41	15.8	106	40.8	1.38	5 th
Video/audio CD/CD/cassette	95	36.5	8	3.1	34	13.1	123	47.3	1.29	6 th
Mobile phone	134	51.5	3	1.2	37	14.2	86	33.1	1.71	1 st
CCTV	27	10.4	13	5.0	27	10.4	193	74.2	.52	18 th
Digital camera	42	16.2	20	7.7	34	13.1	164	63.1	.77	11 th
Data projector	30	11.5	21	8.1	30	11.5	179	68.8	.62	16 th
Fax	18	6.9	13	5.0	19	7.3	210	80.8	.38	19 th
Television	106	40.8	6	2.3	29	11.2	119	45.8	1.38	5 th
Radio	119	45.8	3	1.2	26	10.0	112	43.1	1.50	3 rd
Newspaper	111	42.7	16	6.2	30	11.5	103	39.6	1.52	2 nd
Journals	58	22.3	29	11.2	37	14.2	136	52.3	1.04	8 th
Posters	60	23.1	17	6.5	44	16.9	139	53.5	.99	9 th
Bulletin	40	15.4	19	7.3	32	12.3	169	65.0	.73	13 th
Newsletters	46	17.7	18	6.9	34	13.1	162	62.3	.80	10 th
GIS	16	6.2	10	3.8	27	10.4	207	79.6	.37	20 th

Table 5b: Respondents' level of ICTs utilization

Level of utilization	F	%	Minimum score	Maximum score	Mean score	Standard deviation
Low (< mean)	136	52.3	.00	60.00	19.6154	17.72239
High (≥ mean)	124	47.7				
Total	260	100				

Benefits derived from ICTs

The results in Table 6a revealed that majority of the respondents adjudged most of the benefits derived from ICTs utilization high. The benefits included motivation of students to learn (63.8%), facilitating knowledge sharing with colleagues (60.0%), extends subject knowledge (57.7%), makes learning interesting, enables teachers to help learners with special needs (56.6%), improves presentation of materials (56.2%) and makes learning more diverse (52.7%). Other benefits that were adjudged high included developing range of teachers' existing pedagogic practices (52.3%) encourages learners to reinforce learnt material using individual learning style (49.6%), makes learning enjoyable and engages learners according to their potentials (45.0%) and assist in planning and presentation for efficient teaching (40.4%). Also indicated in Table 6a is the fact that motivation of students to learn (mean = 2.45), facilitating knowledge sharing with colleagues

(mean = 2.42), extends subject knowledge (mean = 2.41), makes learning enjoyable and engages learners according to their potentials (mean = 2.40) ranked 1st, 2nd, 3rd and 4th respectively. Summarily, Table 6b showed that majority (60.4%) of the respondents derived high level benefits notwithstanding that their low level of ICTs utilization and high constraints.

Table 6a: distribution of respondents based on benefits derived from utilization of ICTs

Benefits	High		Moderate		Low		Mean	Rank
	F	%	F	%	F	%		
Extends subject knowledge	137	52.7	84	32.3	39	15.0	2.41	3 rd
Assist in planning and preparation for efficient teaching	105	40.4	89	34.2	66	25.4	2.36	7 th
Develops range of teacher's existing pedagogic practices	136	52.3	82	31.5	42	16.1	2.12	10 th
Enables teachers to help learners with special needs	147	56.5	79	30.4	34	13.1	2.34	8 th
Facilitates knowledge sharing with colleagues	156	60.0	59	22.7	45	17.3	2.42	2 nd
Makes learning interesting, enjoyable and engages learners according to their potentials	117	45.0	85	32.7	58	22.3	2.40	4 th
Encourages learners to reinforce learnt materials using individual learning style	129	49.6	59	22.7	72	27.6	2.18	9 th
Provides learners from poor digital background an opportunity of being included in ICTs world	155	59.6	56	21.5	49	18.8	2.18	9 th
Serves as source of reference and means of communication with peers and experts	155	59.6	56	21.5	49	18.8	2.37	6 th
Makes lesson more diverse	137	52.7	77	29.6	46	17.7	2.32	
Improves presentation of materials	146	56.2	77	29.6	37	14.2	2.39	5 th
Motivates students to learn/teaching	166	63.8	53	20.4	41	15.8	2.45	1 st

Table 6b: Respondents' level of benefits of ICTs utilization

Level of benefits	F	%	Minimum score	Maximum score	Mean score	Standard deviation
High (< mean)	157	60.4	.00	36.00	27.9346	7.75540
Low (≥ mean)	103	39.6				
Total	260	100				

Constraints to utilization of ICTs

With respect to constraints to ICTs utilization, results in Table 7a show that lack of electricity (71.9%), inadequate computers and other hard ware (59.25%), poor leadership (57.5%) and lack of internet connectivity (53.5%) posed major constraints to most respondents. Also lack of digital skills 951.9%), inadequate training (51.9%) and vandalism and burglary (35.0%) were major constraints. The result further indicated that while majority (43.5%) adjudged insufficient time as minor constraints, technophobia (43.1%), lack of confidence 943.5%) and resistance to change (41.2%) posed no constraints to most respondents. On the other hand, lack of electricity (mean =

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1.52), inadequate computers and other hardware (mean = 1.40), lack of internet connectivity (mean = 1.35), inadequate training (mean = 1.31) ranked 1st, 2nd, 3rd and 4th respectively as constraints.

On the overall, the result as presented in Table 7b indicated that majority (60.8%) of the respondent had high level of constraints to ICTs utilization in the area. The result concurs to that of Evoh (2007) who observed that despite ICTs’ recognized role in improving education, it has remained a low financial priority in most educational systems in Africa. He further noted lack of resources for a sustainable integration of ICTs in education arising from budgetary constraints, management/leadership challenges, shortage of teachers with prerequisite skills, and educational resources as constraints.

Table 7a: distribution of respondents based on constraints to utilization of ICTs

Constraints	Major		Minor		Not a constraint		Mean	Rank
	F	%	F	%	F	%		
Lack of digital skills	135	51.9	71	27.3	54	20.8	1.18	6 th
Poor leadership	134	51.5	61	23.5	65	25.0	1.27	5 th
Technophobia	67	25.8	81	31.2	112	43.1	.83	9 th
Lack of internet connectivity	139	53.5	73	28.1	48	18.5	1.35	3 rd
Inadequate computers and other hardware	154	59.2	55	21.2	51	19.6	1.40	2 nd
Vandalism and burglary	91	35.0	83	31.9	86	33.1	1.02	7 th
Lack of electricity	187	71.9	31	11.9	42	16.2	1.56	1 st
Insufficient time	67	25.8	113	43.5	80	30.8	.95	8 th
Inadequate training	135	51.9	71	27.3	54	20.8	1.31	4 th
Lack of confidence	51	19.6	96	36.9	113	43.5	.76	11 th
Resistance to change/negative attitude	61	23.5	92	35.4	107	41.2	.82	10 th

Table 7b: Respondents’ level of constraints to utilization of ICTs

Level of constraints	F	%	Minimum score	Maximum score	Mean score	Standard deviation
High (< mean)	158	60.8	.00	22.00	12.4500	5.17655
Low (\geq mean)	102	39.2				
Total	260	100				

Relationship between variables

The Chi square analysis results shown in Table 8 revealed that at 5 percent level of significant, there is no significant relationship between sex ($\chi^2 = 0.232$), educational status ($\chi^2 = 0.074$). Also the results of PPMC analysis as shown in Table 8 revealed that information ($r = 0.330$), awareness ($r = 0.357$), benefits ($r = 0.162$), access ($r = 0.770$) had significant correlation with respondents’ level of ICTs utilization.

Table 8: Chi square and PPMC test of relationship between selected independent variables and ICTs utilization

Variable	χ^2 - value	df	CC	P	Decision
Sex	0.232	1	0.030	0.630	NS
Educational status	0.074	2	0.074	0.491	NS

Variable	r - value	p	Decision
Information	0.330	0.000	S
Awareness	0.357	0.000	S
Benefits	0.162	0.009	S
Constraints	0.014	0.826	NS
Access	0.770	0.000	S
Age	-0.056	0.375	NS
Years of experience	0.002	0.973	NS

DISCUSSION OF FINDINGS

The result shows that majority the teachers were within less the mean age of 34 years. This implication is that basic rural secondary school teachers in the state are very vibrant, dynamic and can easily embrace/explore new pedagogies that can positively affect their teaching responsibility. Majority were also revealed to have an average of 9 years teaching experience. This is capable of influencing their understanding on the pros and cons of exploring ICTs as an innovation in teaching.

Greater percentage of the teachers were males, an indication of an unequal representation of both gender in teaching profession which also does not facilitate even distribution of resources, developmental success nor bridge gender gap in technical expertise and familiarity in ICTs. The result contradicts Oluwatay & Aliyu (2007) who found equal representation of both gender in ICTs usage Atisbo Local Government area.

Most of the teachers also possessed NCE/B.ED certificates. This is line with a priori expectation going by the prerequisite requirements for recruiting teachers for that level of education. This implies that the teachers can easily learn and understand how and why the use of ICTs in carry out their tasks is important. The result however, is in tandem with that of (Oluwatay & Aliyu 2007). Majority of teachers' level of ICTs awareness in the state was revealed to be high. The implication is that their information sources on ICTs were effective enough in building up such awareness status. This further connotes that ICTs' knowledge in the state is becoming widespread perhaps due teachers understanding of its significance in teaching and learning. The finding corroborates

that of Tedla (2012) who reported that ICTs awareness is becoming ubiquitous and has the potential in promoting and transforming teaching and learning process.

The rankings of mobile phone and internet as most accessed ICTs were in line with a priori expectation. The proliferation, benefits derived, easy to operate and network availability in most rural communities could be seen as good reasons for the access status. The popularity of radio and its accessibility could also be attributed to its affordability and good network availability/signals. That access to newspaper and television ranked 3rd and 4th may be due to their costs and reliance on electricity respectively. Arokoyo (2003) has also posited that access to mobile telephone, internet and the radio is extensive compared to other ICTs for persons living in rural area.

The result that majority had low access to ICTs was unexpected in view of the ICT-Driven Project otherwise called School-Net (www.snnng.org) which, the Federal Ministry of Education launched with the intent to equipping Nigeria schools with computers and communication technologies (FGN 2006).

However, giving that mobile phone, newspaper, radio and internet were rated most utilized ICTs, indicate that availability are becoming increasingly common among teachers in the area. Despite this, the overall utilization of ICTs among most teachers was adjudged low in the area. This can be attributed to the overall low level of ICTs access. This is tandem with Goshit (2006) who observed that although efforts were made to ensure availability, access of ICTs and usage in Nigeria's secondary schools, its level of uptake has remained abysmally low.

Interestingly, despite teachers' low level access and utilization of ICTs, they still adjudged the benefits high. This was unprecedented considering the high level of constraints majority of them experience in accessing and utilizing ICTs. Existing body of knowledge has also demonstrated array of potential benefits associated with ICTs such as to accelerate, enrich, and deepen skills, motivate and engage students, help relate school experience to work practices, create economic viability for tomorrow's workers, as well as strengthening teaching and helping schools change (Yusuf, 2005).

On the overall, despite the level of benefits derived using in teaching, majority of the teachers had series of constraints. Lack of electricity, inadequate computers and other hardware, lack of internet connectivity and inadequate training were ranked 1st, 2nd, 3rd and 4th respectively as constraints. On the overall however, the constraint level was adjudged high. The implication is that low utilization will continue to be the bane of the teachers in the state if right policy frame and intervention are not put in place to check mate the constraints. The result concurs with Evoh (2007) who observed that despite ICTs' recognized roles education; it has remained a low financial priority in most educational systems in Africa. He further noted lack of resources for a sustainable

integration of ICTs in education arising from budgetary and management/leadership challenges, shortage of skilled teachers, and educational resources as constraints.

The Chi square analysis results showed no significant relationship between sex, educational status and level of utilization of ICTs. This implies that sex and educational status were not functions of teachers' level of ICTs utilization in the area. On the other hand, the PPMC result revealed that information, awareness, benefits, access had significant correlation with respondents' level of ICTs utilization. The positive correlation, however, implied that as information, awareness, benefits and access increased, the more utilization of ICTs by teachers improves in the schools. In a study of ICT use among rural people in Oyo State, Nigeria, Adekoya (2006) contrarily found negatively relationship existing between these variables and the utilization of ICTs.

CONCLUSION

It is concluded from the findings that the respondents are mainly males who are in their active work age with sound educational qualification and relatively few years of experience in teaching job. Radio, television, mobile phone and computer were major ICTs the respondents were aware. The level of awareness was high and internet, television, friends and colleagues were major channels of respondents' awareness.

Access was low even when mobile phone, internet, newspaper and computer mostly accessed. Level of utilization was low notwithstanding that mobile phone; internet, newspaper and radio were most utilized ICTs. The high level of constraint did not translate into low level of benefits respondents' derived from utilizing ICTs. The PPMC analysis result shows that information, awareness, benefits and access significantly correlated with respondents' level of ICTs utilization.

Recommendations

Based on the findings of the study, it is recommended that:

1. Recruitment of more female gender into the teaching job is expedient for gender equity, fairness and even distribution of economic resources of the state
2. Workshop/seminar should be tactfully used as awareness creation avenues to teachers on the need for ICTs skills and utilization in teaching and learning process
3. Government and non-governmental stakeholders should as a matter of urgency intervene in making ICTs not only available, accessible but affordable to teachers
4. Training and retraining of all serving teachers in ICTs skills should be carried out on regular basis by relevant stakeholders
5. Skills in ICTs usage should be made a prerequisite requirement in recruiting personnel into teaching job
6. Areas of constraints as identified by the study should be remedied by the government for improved teaching/learning outcomes

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British Journal of Multidisciplinary and Advanced Studies:
Education, Learning, Training & Development 3(2),102-116, 2022

Print ISSN: 2517-276X

Online ISSN: 2517-2778

Website: <https://bjmas.org/index.php/bjmas/index>

Published by European Centre for Research Training and Development UK

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