Effects of utilization of e-learning on academic staff performance among selected tertiary institutions in Benue State, Nigeria

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Abstract: **This study was conducted in three Universities to determine the effects of e-learning status on academic staff performance amongst selected tertiary institutions in Benue State. These were purposively restricted to degree awarding institutions in the State to achieve uniformity in subjects responses. Total number of respondents' selected using random selection were 263. The population of this study embraced the entire 692, 420 and 205 teaching Staff of Federal University of Agriculture Makurdi, Benue State University and University of Mkar respectively from the rank of Assistant lecturer to that of professor. Data for the study were collected from primary sources through the aid of a structured questionnaire. Using multi stage sampling technique; a proportion of 20% from each University was selected giving 138, 84 and 41 academic staff for Federal University of Agriculture Makurdi, Benue State University and University of Mkar respectively to give a total sample of 263 respondents. The study found that, though the utilization of e-learning enhances academic staff performance it's very much depends on the staff computer literacy, competence, self-interest and available logistics' in the institutions. The study's findings imply that e-learning as a strategy for enhancing academic performance needs to be given attention in infrastructures, logistics, improvement in funding and capacity building of staff from its present low status through policies.**

Key Words: **E-learning, Utilization, performance, institutions**

I. INTRODUCTION

Information Communication Technology (ICT) constitutes indispensable machinery as well as the focus for sustainable modern universal information system today as opined by earlier authors like (Webb, Barker and Schalk, 2004and Kozma 2005). In addition, the authors further explained that (ICT) has succeeded in creating societies, communities and the world in general that is always easily informed, thus constituting a good knowledge economy in societies, countries and nations. Also the emergence of such communities and societies is ever on the increase. Above all, networks proliferation, access to (ICT) system, rapid advances in web technology and the internet services like E-learning attest to the rapid growth phenomena [Karaali, Little and Calisir, 2011].E-learning generally embraces learning methods that utilize electronic instructional content and delivered through internet. The use of E-learning connotes or is synonymous to web based or on-line learning which ultimately results into new knowledge of information

acquisition (Wild, Griggs and Downing 2002). Given the present trend of Globalization, new knowledge or information acquisition becomes a critical or highly essential requisite for competitiveness or comparative advantage, thus E-learning becomes an important source of knowledge acquisition, application, creation and expertise (Khan 2005).

According to Amedu, (2014) e- Learning is the application of a whole range of technologies involved in information processing and electronic communications for teaching and learning such as computers, internet, e-mail, computer software, satellite, mobile communication gadgets, and other allied electronic devices for dissemination of knowledge and information. It involves the application of computer and information technology in teaching and learning.

Communication technologies include all media employed in transmitting audio, video, data or multimedia such as cable satellite, fibre optics, wireless (radio, infra – red, Bluetooth, Wi-Fi). Network technologies on the other hand include: Personal Area Networks (PAN), Campus Area Network (CAN), intranets, extranets, Local Area Networks (LANs), Wide Area Networks (WANs) and the internet. Computer technologies include all removable media such as optical discs, disks, flash memories, video books, multimedia projectors, interactive electronic boards, and continuously emerging state-of-the art personal computers (PCs). Mobile technologies such as mobile phones, Personal Digital Assistants (PDAs), palmtops, etc which have information as their material object are also used in e-learning (Freedman, 2001).

Performance appraisal/evaluation is a systematic process through which employees are given feedback on their performance, in monetary terms, further reward and promotion. Criteria for evaluating academic staff of universities and colleges can be categorized into three groups: teaching, research and service; teaching being the primary assignment of the academic. Teaching includes not only what is taught but also how it was taught. The current performance appraisal/evaluation is deficient having placed a greater emphasis on publication and paper presentation at conferences than on teaching effectiveness which is the beginning of academic excellence. In addition Students evaluation of

teachers effectiveness (SETE) is not used in assessing academic staff of universities and colleges, their in-class attitudes and behaviours towards students which should form the core of the performance appraisal/evaluation are not evaluated, with the advent of e-learning, the omitted indicators can be included in performance evaluation of academics, Igbojekwe, P.A. (2015)

In the last three decades, the National Universities Commission has been working to lay the foundation for e-learning through investment in ICT infrastructure, management information systems, e-mail access and library information services (Kumar2001). Still, many institutions find it difficult to conceptualize and implement these initiatives locally. There have been essentially three kinds of Higher Education Initiatives (HEIs) e-learning initiatives in Nigeria; local initiatives, corporate initiatives, and international partnerships (Calvert 1986). First, local initiatives are conceived and developed using local resources. Corporate initiatives – such as Cisco and Microsoft programmes – are developed abroad and delivered in Nigeria extensively through academies which are hosted in HEIs. The third kind has been developed through international cooperation. Precisely, the NetTel@Africa, is a telecommunication management post graduate programme sponsored by the Nigerian Communications Commission (NCC) in partnership with regional stakeholders united in their desire to increase the capacity of the African ICT sector, for E-learning initiatives (Coldeway 1982). Achieving the initiatives for the implementation of the three e-learning, basic requisites which are as follows:

i. Local initiatives,
ii. Corporate initiatives and
iii. International initiatives, has been an uphill task that must be accomplished for effective e-learning to enhance performance.

Performance, which is the focus of any human organization or activity, connotes positive bearing on humans, can contextually be decomposed to include several variable indicators according to Kozma (2005). The variables are: improved communication (written and oral), demonstration efforts/physical improvement, personal discipline, facilitating peer and team performance, supervision, leadership, management/administration competence as well as high quality output, like the number or population of students coverage or taught per period of time all attest performance assessment. This study therefore is set out to bring to lime light the contribution e-learning makes to enhance academic performance in tertiary institutions.

II. METHODOLOGY

The population of the study embraced the entire 745, 556 and 230 teaching Staff of Federal University of Agriculture Makurdi, Benue State University and University of Mkar respectively from the rank of Assistant lecturer to that of professor who qualified to teach by the University regulatory body. The sample size for this study comprised 138, 84 and 41 respondents (academic staff) drawn from Federal University of Agriculture Makurdi, Benue State University and University of Mkar respectively. The figures were obtained through a sampling technique as shown in the sampling techniques section. A sample was selected using multi stage sampling technique. Stage one was the selection of all the 3 universities in the State. In stage two, all academic staff from the ranks of assistant lecturer to professor were selected from the three Universities. These ranks (Assistant Lecturers – Professors) have 692, 420 and 205 academic staff for Federal University of Agriculture Makurdi, Benue State University and University of Mkar respectively. In the third stage a proportion of 20% from each University was selected giving 138, 84 and 41 academic staff for Federal University of Agriculture Makurdi, Benue State University and University of Mkar respectively and a total 263 academic staff for study as shown in table 1 below.

Table 1: Sample Size Selection Plans

S/N	Institution	Sampling frame	Proportion	Sample size
1	FUAM	692	0.20	138
2	BSU	420	0.20	84
3	UMM	205	0.20	41
Total		1317		263

Field Survey: 2019

III. RESULTS AND DISCUSSION

Table 2: Utilization of e-learning status amongst tertiary institutions in Benue State

Variable		FUAM		BSU		UMM	TOTAL
	F	%	F	%	F	%	
Use of internet to facilitate teaching and learning							
SA							
A	18	13.04	12	14.29	3	7.32	
D	120	86.96	72	85.71	23	56.10	263
SD					15	36.95	
Use of computers in the assessment of students							
SA							
A	93	67.39	72	85.71	22	53.66	263
D	45	32.62	12	14.29	19	46.34	
SD							
Provision of soft copies of lecture materials to							

students							
SA							
A	29	21.01	20	23.81	5	12.20	263
D	109	78.99	64	76.19	21	51.22	
SD					15	36.59	
Possession of personal or group web pages							
SA							
A	9	6.25	9	10.71			263
D	129	93.48	75	89.29	41	100	
SD					51	2.20	
Possession of personal or group e-mail accounts							
SA							
A	138	100	84	100	28	68.29	263
D			8	19.51			
SD							
Issuance of internet-solution based assignments to students							
SA	14	10.14	2	2.38	23	56.10	263
A	64	46.38	34	40.48	14	3415	
D	36	26.09	36	42.864		9.76	
SD	24	17.39	12	14.29			
Use of computer simulations to aid teaching and learning							
SA							
A							
D							
SD	138	100	84	100	41	100	263
Accessing other electronic devices that are capable of collecting and processing information							
SA	39	28.26			19	46.34	
A	63	45.65	61	72.62	3	7.32	263
D	36	26.09	23	27.38	19	46.34	
SD							

Online partnership with others scholars for academic publications							
SA	64.35		10	24.39			
A	3	2.17	6	7.14	8	19.51	263
D	87	63.04	73	86.90	4	9.76	
SD	42	30.43	5	5.65	19	46.34	
Provision of video or audio lectures to students							
SA	32.17		8	19.51			
A	96.52		14	34.15			263
D	57	41.30	17	20.24	19	46.34	
SD	6950.0	67	79.76				

Field Survey: 2019

Note:

SA = Strongly Agreed

A = Agreed

D = Disagreed

SD = Strongly Disagreed

Utilization of e-learning status amongst tertiary institutions in Benue State

Information contained in table 2 shows the level of utilization of e-learning facilities amongst tertiary institutions in Benue State (FUAM, BSU and UMM). The result shows that, in FUAM, 13.04% of academic staff agreed that they use internet to facilitate teaching and learning while 86.96% disagreed with the use of internet in facilitating teaching and learning, in BSU, 14.29% of the respondents (academic staff) agreed that they use the internet to facilitate teaching and learning while 85.71% do not, similarly, in UMM, 7.32% of respondents used internet in facilitating teaching and learning, 56.10 disagreed and 36.59% strongly disagreed with the use of internet in facilitating teaching and learning in the institution. On the use of computers in the assessment of students, 67.39% of academic staff of FUAM agreed while 32.61% disagreed, in BSU, 85.71% of academic staff agreed with the use of computers in assessing students while 14.29% disagreed, in UMM, 53.66% of respondents agreed with the use of computers in the assessment of students while 46.34% disagreed.

Provision of soft copies of lecture materials to students as presented in table 2 shows that in FUAM, 21.01% of the respondents agreed that they provide soft copies of lecture material to their students while majority (78.99%) disagreed with provision of soft copies of lecture materials to their

students, in BSU, 23.81% of respondents agreed that they provide soft copies of lecture materials to students while 76.19% disagreed, in UMM, 12.20% of respondents agreed, 51.22% disagreed and 36.59% strongly disagreed with provision of soft copies of lecture materials to students, on possession of personal or group web pages as shown in table 2, 6.52% of academic staff in FUAM, agreed to either possessed a personal or group web page while 93.48% disagreed with possession of personal or group web pages, in BSU, 10.71% of academic staff possessed a personal or group web page while 89.29% do not, in UMM, 100% of the academic staff disagreed with possession of either personal or group web pages, most universities in Nigeria possess web pages. Again, table 2 gives information on possession of personal or group e-mail accounts, the table shows that in FUAM, and BSU all the respondents (academic staff) agreed to have possessed either a personal or group e-mail accounts, in UMM however, 68.29% agreed to have possessed a personal or group email account 12.20% of respondents strongly agreed to this while 19.51% disagreed to possessing a personal or group e-mail accounts.

Also, the result of table 2 shows that information on the use of e-learning in the issuance of internet solution based assignments to students, the result shows that in FUAM, 10.14% of academic staff strongly agreed that they issue internet solution based assignments to their students, 46.38% agreed, 26.09% disagreed and 17.39% strongly disagreed with issuance of internet solution based assignments to students. In BSU, 2.38% of the academic staff strongly agreed with issuing of internet solution based assignments, 40.48% agreed, 42.86% disagreed while 14.29% strongly disagreed in UMM, however, 56.10% of respondents strongly agreed that they issue internet solution based assignments to their students, 34.15% agreed and 9.76% strongly disagreed to issuing internet based solution assignment to their students, issuance of internet based solution assignment by academic staff to students may vary among staff depending on their amount of training received and then largely to the discretion of the academic staff in context. However, on the use of computer simulation to aid teaching and learning, all the respondents in the three (3) institutions studied, strongly disagree.

The result of table 2 continues with responses of respondents (academic staff) on whether they can access other electronic devices that are capable of collecting and processing information, the result in FUAM shows that 28.266% of respondents strongly agreed that they access other electronic devices capable of collecting and processing information 45.65% agreed, while 26.09% of the respondents disagreed in BSU, 72.62% of the respondents agreed to accessing other electronic devices that the capable of collecting and processing information, while 27.38% disagreed, similarly in UMM, 46.34% of the respondents strongly agreed to accessing other electronic devices capable of collecting and processing information, 7.32% agreed while 46.34% disagreed. Devices other than computers such as calculators,

I-phones, smart and android phones etc. can be used in collecting and analyzing information.

On utilization of e-learning facilities for online partnership with other scholars for academic publications as shown in table 2, 4.35% of respondents in FUAM, strongly agreed, 2.17% agreed, 63.04% agreed and 30.43% strongly disagreed with the use of e-learning facilities for on-line academic publication with other scholars, in BSU, 7.14% of the respondents agreed with the use of e-learning facilities for online academic publications with other scholars, 86.90% disagreed while 5.95% strongly disagreed, in UMM however, 24.39% strongly agreed with the utilization of e-learning facilities for online partnership with other scholars in academic publications, 19.51% agreed, 9.76% disagreed while 46.34% strongly disagreed. Finally, table 2 below provides information on the use of e-learning facilities in the provision of video or audio lectures to students, the table shows that in FUAM, 2.17% of respondents strongly agreed with provide video or audio lectures to students, 6.52% agreed, 41.30% disagreed while 50.0% of the respondents strongly disagreed with providing video or audio lectures to their students, in BSU, 20.24% of academic staff disagreed with providing either video or audio lectures to their students and79.76% of their strongly disagreed, lastly, in UMM, 19.51% of the respondents strongly agreed with the use of e-learning facilities in the provision of video or audio lectures to students 34.15% agreed while 46.34% disagreed with this position.

Table 3: Effects of e-learning on academic staff performance amongst tertiary institutions in Benue State

Performance		FUAM		BSU		UMM	TOTAL
indicators	F	%	F	%	F	%	
Number of students taught per time increased							
High	15	36.59					
Moderate	23	16.67	17	20.67	5	12.20	263
Low	15	83.33	67	79.33	21	51.22	
Ease of teaching and assessing students							
High	12	29.27					
Moderate	33	23.91	24	28.57	8	19.51	263
Low	105	76.07	60	71.43	21	51.22	
Time Reduction in teaching and assessing							
High	13	31.71					
Moderate	51	36.0	34	40.48	10	24.39	263
Low	87	63.04	50	59.52	18	43.90	
Ease of research							
High							

Moderate	75	54.35	45	53.57	24	58.54	
Low	63	45.65	39	46.43	17	41.46	263
Improvement in quality a number of publications							
High	17	41.46					
Moderate	115	83.33	73	87.34	23	56.10	263
Low	23	16.67	11	12.66	1	2.44	
Reduced time of publication							
High							
Moderate	87	63.04	51	60.71	26	63.41	263
Low	51	39.96	33	39.29	15	36.95	
Reduced cost of publication							
High	4	9.76					
Moderate	116	84.06	68	80.95	35	85.37	263
Low	22	15.94	16	19.05	2	4.88	
Improved students' academic understanding and performance							
High	6	14.63					
Moderate	70	50.72	44	52.38	18	43.90	263
Low	68	49.28	40	47.62	17	41.46	
Enhanced interconnectivity among global academic scholars							
High	12	29.27					
Moderate	91	65.94	58	69.05	18	43.90	263
Low	47	34.06	26	30.95	11	26.83	
Global competitiveness							
High	8	19.51					
Moderate	104	75.36	62	73.81	26	63.41	263
Low	34	24.64	22	26.19	7	17.07	
Efficiency in students' results Computation							
High	132	95.65					
Moderate	6	4.35	81	96.43	25	60.98	
Low	1	2.44	3	3.57	15	36.59	263

Field Survey: 2019

Effects of e-learning on academic staff performance amongst tertiary institutions in Benue State

The result in table 3 gives information on the effects that the availability and utilization of e-learning facilities have on the performance indicators of academic staff amongst tertiary institutions in Benue State. For FUAM, the table shows that 16.67% of respondents affirmed that the number of students taught per time increased moderately with the availability and utilization of e-learning facilities in the institution while 83.33% of respondents see the effects as being low in this regard, in BSU, 20.67% of academic staff affirmed that the availability and utilization of e-learning facilities in their institution has a moderate effect on the number of students taught per time while 79.33% said that using e-learning facilities has low effect on number of students taught per time, similarly in UMM 36.59% of respondents affirmed to a high increase in the number of students taught per time due to availability and utilization of e-learning facilities in their institutions, 12.20% said the effects are moderate while 51.22% see the effects as being low.

Table 3 also shows effects of availability and utilization of e-learning facilities on the ease of teaching and assessing students in tertiary institutions in Benue State. The table shows that in FUAM, 23.19% of academic staff said that the use of e-learning facilities moderately ease teaching and assessment of students while 76.09% of the respondents said the effect on the ease of teaching and assessment of students is low, in BSU 28.57% of respondents affirmed that e-learning facilities moderately eased teaching and assessment of students while 71.43% of the respondents see the effects in this regard as being low, in UMM however, 29.27% of the academic staff were of the opinion the availability and use of e-learning facilities highly ease than in teaching and assessing students 19.51% said the effect is moderate where as 51.22% of the respondents in UMM see the effect in this regard as being low.

Time reduction in teaching and assessing students is also a possible performance indicator of the effect of the use of e-learning facilities in tertiary institutions, in table 3 as shown above, 36.96% of academic staff agreed that the use of e-learning facilities moderately reduced the time taken to teach and assess students while 63.04% of them could only see low effect in this regard, in BSU, 40.48% of respondents said the effect on time reduction in teaching and assessing is moderate while 59.52% said the effect is low. In UMM, 31.71%, 24.39% and 43.90% of the respondents (academic staff) said the effect of the use of e-learning facilities on time reduction in teaching and assessing students is high, moderate and low respectively. On the effect of the use of e-learning facilities on the ease of research, 54.35% and 45.65% of academic staff in FUAM said the effect is moderate and low respectively, in BSU 53.57% and 46.43% of academic staff rated the effect of the use of e-learning facilities on the ease of research as being moderate and low respectively. In UMM, 58.54% and 41.46% of the respondents affirmed that the effect of the use of e-learning facilities on the ease of research in their institution is moderate and high respectively, e-learning is very essential in the research arena, with the advent of the internet, research is made relatively easy as one does not necessarily have to visit a library to get information, one can seat in the comfort of

one's office or home and carry out research, also information on the internet are more recent than those in the libraries thereby relieving most academicians the stress of running around to gather information on a research project. Table 3 again shows that the use of e-learning facilities in tertiary institutions could lead to improvement in the quality and number of academic publications in tertiary institutions, the table shows that in FUAM, 83.33% of the respondents agreed that the use of e-learning facilities moderately improve the quality and number of publication they put in, the remaining 16.67% however said the effect is low in this regard, in BSU, 87.34% and 12.66% of academic staff see the effect of the use of e-learning facilities on improvement in quality and number of publications in their institution as being moderate and low respectively, however, in UMM, 41.46%, 56.10% and 2.44% of academic staff in affirmed positive effect of the use of e-learning facilities on the improvement in the qualityand number of publications stated that the effect is high, moderate and low respectively. With e-learning facilities like the internet, researchers in the country have the opportunity to show case their research outputs to the global community where they are critically scrutinized and improved upon, this greatly enhance the quality of research more than ever as today's researches have the opportunity of being measured and adjusted on the global scale.

The result in table 3 also shows the effect of the use of e-learning facilities on reduced time of publication as a performance indicator, in FUAM, the result shows that 63.04% and 39.96% of the respondents agreed that the use of e-learning facilities in their institutions have reduced the time taken to publish their academic works to a moderate and low extent respectively. In BSU, also 60.71% of academic staff affirmed that the use of e-learning facilities reduces the time taken for publication moderately while 39.29% said the effect is low, in a similar vein, 63.41% and 36.59% of respondents in UMM said that using e-learning has reduced their time of publication to a moderate and low degree respectively, with e-learning facilities time of publication can be reduced as one does not have to necessarily go the publishing house to publish research findings, with the availability of online journals, academic staff can publish in any corner of the world at relatively low time requirement. The table also shows that the use of e-learning facilities could reduce the cost of publication, it shows that in FUAM, 84.06% of respondents alluded to the that the use of e-learning facilities moderately reduce the cost they usually incur in publication while 15.94% of the said the effect on reduction of cost of publication is low, in BSU, 80.95% of respondents said reduction in cost of publication is moderate with the use of e-learning facilities while 19.05% said there is only a low reduction in cost of publication, in UMM, 9.76%, 85.37% and 4.88% of academic staff were of the opinion that the use of e-learning facilities reduce the cost of publication to a high, moderate and low extent respectively. Table 3 continues with information on the effect of the use of e-learning facilities on improved student's academic understanding and performance, the result shows

that 50.72% of academic staff of FUAM, agree that the use of e-learning facilities moderately improve student's academic understanding and performance while 49.28% of them said the improvement in students' academic understanding and performance as a result of the use of e-learning facilities is low, in BSU, 52.38% said its moderate while 47.62% were of the opinion that, the effect is low, in UMM, however, 14.63% of respondents said is high, 43.90% said its moderate and the remaining 41.46% said the effect is low.

The use of e-learning facilities in tertiary institutions can enhance interconnectivity among global academic scholars as shown in table 3. The table shows that in FUAM, 65.94% of academic staff agreed that the use of e-learning facilities have a moderate effect on the enhancement of interconnectivity among global academic scholars while 34.06% said the effect is low, 69.05% of academic staff of BSU said there is a moderate effect in the use of e-learning facilities in enhancing interconnectivity among global academic scholar while 30.95% of them said there is a low effect, in UMM, however, 29.27%, 43.90% and 26.83% of academic staff opined that the use of e-learning facilities have effect on improved students' academic understanding and performance to a high, moderate and low expert respectively. Table 3 also show result of the effect of the use of e-learning facilities on global competitiveness amongst tertiary institutions in Benue State, it show that in FUAM, 75.36% of respondent affirmed a high effect of the use of e-learning facilities on global competitiveness amongst academic staff in tertiary institutions while 24.64% of respondents said that the effect on global competitive is low, similarly, 73.81% and 26.19% of respondents in BSU said that the effect on global competitiveness is moderate and low respectively, in UMM, 19.51%, 63.41% and 17.07% of academic staff affirmed that the effect of the use of e-learning facilities on global competitiveness amongst academic staff is high, moderate and low respectively.

Another area in while the effect of the use of e-learning facilities on academic staff performance can be felt is that of the computation of students' result in tertiary institutions, the result in table 3 shows that, in FUAM, 95.65% of academic staff said the use of e-learning facilities is highly efficient in the computation of students results, 4.35% said that the efficiency in the computation of students' results is moderately efficient with the use e-learning facilities, in BSU 96.43% and 3.57% of academic staff agreed that the use of e-learning facilities enhances efficiency in the computation of students results to a high and moderate levels respectively, in UMM, however, 60.98% of respondents affirmed a low effect is moderate while 2.44% of respondents affirmed a low effect.

In specifying the average number of students taught using e-learning facilities, 57.97% and 42.03% of academic staff in FUAM said that the effects are moderate and low respectively, in BSU, 59.52% and 40.48% of the respondents affirmed that the average number of students taught using e-learning facilities is moderate and low respectively, in UMM,

however, 36.59% said the effect on the average number of students taught using e-learning facilities is high, while 31.71% and 31.71% said the effect is moderate and low respectively.

Lastly, the result of table 3 shows the effect of the use of e-learning facilities on the spatial distance of students taught, the result shows that low spatial distance of students taught, in BSU, 20.24% of respondents indicate a moderate spatial distance of students taught while 79.76% indicate a low spatial distance of students taught. Lastly, 12.20%, 36.59% and 51.22% of academic staff in UMM indicated a high, moderate and low spatial distance of students taught respectively

IV. CONCLUSION

Based on the findings, this study concludes that, the utilization of e-learning improves academic staff performance amongst tertiary institutions in Benue, though in varying proportions, e-learning still needs to be given attention in infrastructures, logistics, improvement in funding and capacity building of staff from its present relatively low effects on academic performance through deliberate policies.

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