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Full Length Research Paper

Availability and utilization of ICT tools for effective instructional delivery in tertiary institutions in Cross River State, Nigeria

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The study accessed availability and degree of utilization of ICT tools for effective instructional delivery in tertiary institutions in Cross River State. Lecturers selected for the study 300 using simple random sampling. Four research questions were formulated to guide the study. A questionnaire titled Availability and Utilization of ICT tools for effective instructional delivery in tertiary institutions in Cross River State was the only instrument used for data collection (ICTTEIDQ). The questions were statistically analysed using simple percentage. The results obtained revealed that availability and utilization of ICT tools for effective instructional delivery is significantly low. Cyber Cafes, internet connectivity and use of lap tops is a common phenomenon among institutions and lecturers. Competence in the use of ICT tools among lecturers is discouraging. However, lecturers from University of Calabar differed significantly with their counterparts from Nuga Poly and COE (A) in terms of utilization and competence of ICT tools. Recommendations were made to enhance the provision and utilization of ICT tools in tertiary institutions in Cross River State.

Keywords: ICT tools, Availability, Utilization Competence, Effective, Instruction, Delivery, lecturers, tertiary institutions.

INTRODUCTION

Information and Communication Technology (ICT) is an indispensable part of the contemporary world. In fact, culture and society have to be adjusted to meet the challenges of the knowledge age. The pervasiveness of ICT has brought about rapid technological, political and economic transformation which has eventuated in the network society organized around ICT (Akawu, 2009).The field of education has not been unaffected by penetrating influence of information and communication technology. Undoubtedly, ICT has impacted on the quality and quantity of teaching and learning through its dynamic, interactive and engaging content, and it can provide real opportunities for individualized instruction. Information and communication technology has the potential to accelerate, enrich and deepen skills; motivate and engage students in learning; help to relate school experiences to work practices, helps to create economic viability for workers; contributes to radical changes in school; strengthen teaching and provides opportunities for connection between the school and the world (Kirschner and Woperies, 2003). In research, ICT provides opportunities for schools to communicate with one another through e-mail, mailing list, and chat rooms etc. It also provides quicker and easier access to more extensive and current information and it can be used to

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do complex mathematical and statistical calculations. Further more it provides researchers with a steady avenue for the dissemination of research reports and findings (Yusuf and Onassanya, 2004).The utilization of ICT in instructional service delivery among lecturers in Nigeria universities according to Akuegwu, Ntukidem and Jaga (2011) has been more of a departmental affair, rather than institutional and these departments are in sciences, medical and computer sciences where the synergy between research and teaching is strongest. The essential infrastructure for course development and delivery were most accessible (Bassey, Akuegwu and Udida, 2009). Even at that what was obtainable was the lowest aspects of ICT such as print, audio/video tape and digital radios (World Bank, 2002). Akuegwu, Ntukidem and Jaga (2011) write that, the awareness of ICT started gathering momentum in universities in Akwa Ibom and Cross River States in 2004 when University of Calabar entered into a partnership with socket works to process students' records in the aspect of Registration and school charges. Thereafter, other universities followed suit and since then, the evolution of ICT has grown in leaps and bounds. To encourage this development, National University Commission (NUC), the Government Agency responsible for registration and regulation of universities has prescribed personal computer ownership. This is yet to be implemented in the universities and Colleges of Education under study. Bamiro and Liverpool (2002) observes that the computer and ICT generally has already invaded and dominated universities in the developed world, while in Nigeria it has been painfully slow. Akin to this is the report that no real effort has been made in ICT development both at the individual and corporate levels, and that most universities still process results manually (the Guardian Editorial, 2006). Moreso, most university lecturers are yet to acquire the requisite ICT skills, even when the opportunities exist according to Akuegwu, Ntukidem and Jaga (2011) for them to do so they shun them because of the ICT phobia they have developed. Perhaps, this explains why Okogie (2008) the NUC Executive Secretary declares that most university lecturers are incompetent. And of course incompetent lecturers will definitely produce incompetent graduates. This is why Aginam (2006) says the quality of lecturers' instructional service delivery cannot be divorced from their utilization of ICT tools in our universities. According to him (Aginam) most Nigerian universities have little or no infrastructure for cyber cafes, computer equipped classrooms or high speed internet. In most cases do not even have the funds to implement such infrastructures on their own. The problems of no regular power supply, internet connectivity, telephones dysfunctional nature, no specific policy for ICT in education among others. What looks like a ray of hope is the fact that the federal governments have introduced Universal Mandatory Information Technology Training (UMITT) which is being embrace by universities. In the same vein, the Cross River State Ministry of Education is mandatory acquiring lap tops computers to all her primary and secondary schools teachers for effective instructional delivery and competency. The development in ICT in the last two years show that lecturers have access to a wide variety of ICT facilities, materials and texts to improve their content knowledge and instructional pedagogy (Akuegwu et al, 2011). But the impact of this development is yet to be seen on the quality of lecturers' instructional service delivery. With this background, the study is to investigate the availability, degree of utilization and the level of competence of teachers in the use of ICT tools for effective instructional delivery in tertiary institutions in Cross River State.

Research Questions

Are ICT tools available for use in the delivery effective instruction?
What is the degree of utilization of ICT tools for effective instructional delivery?
What is the level of competence among lecturers in the use of ICE tools for effective instructional delivery?
What are the problems affecting ICT utilization? (Motivators/Inhibitors).

Literature Review

ICT tools is seen by Ayo (2001) as the use of computer system and telecommunication equipment in information processing. It is made up of three basic components namely; electronic processing using the computer transmission of information using telecommunication equipment, and dissemination of information in multimedia. ICT tools can simply be defined as the acquisition, processing, storage and dissemination of vocal, textual, pictorial and numerical information by micro-electronic-based combination of computers and telecommunication. It is seen as the product of the marriage between computer technology (essentially for information acquisition storage and processing) and telecommunication technology which is for information distribution.

It is usually expressed mathematically as computer + telecommunication = information technology. ICT utilization is the presentation and distribution of instructional content through web environment (e-teaching) to support learning and communication (Yusuf, 2005). Some of the examples of ICT tools according to Akuegwu et al (2011). Computer tap tops, video machines, multimedia projectors or power points, digital cameras, internet facilities, computer net work, telephone

(GSM and land phones), e-library, television programmes, data base among others.

Effective instructional delivery is seen as the quality of instructional service delivery which entails the extent of effectiveness to which lecturers and teachers generally carry their classroom teaching and learning process (Enyi, 2004).

Akawu (2010) sees ICT tools as tools for addressing challenges in teaching and learning. It is equally good for geographical dispersed of audiences. As a change, it catalyzes various other changes in content methods and overall quality of teaching and learning.

ICT provide a variety of tools to support and facilitate teacher's professional competence ICT transform teaching and helps teachers to be more efficient and effective, thereby increasing their interest in teaching (Yusuf, 2005). ICT can assist in the organization and the structure of the course and course materials thereby promoting rethinking and revision of curriculum and instructional strategies. ICTs increase teachers' emphasis on individualized instruction, and as such enable they spend more time with individual students. This helps students to carry out more independent work and gives the teacher more time to focus on teaching higher level concepts in the classroom, Yusuf (2005) enthused. Okon and Jacob (2002) find that ICT utilization in some selected university especially the use of computer was for statistical analysis than on teaching. This implies that even though ICT utilization was found to have existed in universities, it has been of more benefit to other areas especially research than in teaching and learning situations in the classroom.

Ololube (2005) in his study as quoted by Akuegwu et al (2011) reported that ICT has the potential to accelerate, enrich and deepen teachers' skills; motivate and engage students in learning; helps to relate school experiences to work practices; contributes to radical changes in schools and strengthens teaching. Ramboll (2004) also sees ICT integration in teaching as not uniform. While some universities improve on their provisions of ICT facilities and consequently, their utilization in teaching/learning others are stagnant.

METHODOLOGY

The study was conducted in Cross River State which is one of the six states in the South-South Geo-political zone of Nigeria. The design of the study was a descriptive type using survey method. The population was lecturers in tertiary institutions in Cross River State. The institutions include:

a. University of Calabar.
b. Cross River University of Technology (CRUTECH), Calabar.
c. Cross River State College of Education.
d. School of Health Technology, Calabar.
e. NUGA Polytechnic, Ikom (Private).
f. Elder Oyama Memorial College of Education, Ovat – Obubrta (Private).
g. Federal College of Education, Obudu.
h. State College of Technology (Yet to commence academic programmes), Ugep.

Out of the eight (8) tertiary institutions three (3) were selected for the study and they included:

a. University of Calabar, Calabar.
b. Cross River State College of Education, Akamkpa.
c. NUGA Polytechnic, Ikom, Cross River State.

The three institutions were selected along the line of federal, state and private ownership to give the require spread. Random sampling technique was used to select 300 lecturers from the three (3) tertiary institutions with Unical 150, CRSCOE (A) 100 and NUG Polytechnic 50 lecturers. The instrument for data collection was a questionnaire titled Availability and Utilization of ICT tools for effective instructional delivery questionnaire (ICT.T.T.E.I.D.Q.). The instrument was divided into four (4) parts. Part 1 sought information on the available ICT tools for effective instructional delivery. The responses to the ten (10) ICT tools were Available and Not Available.

Part 2 dealt with the degree of utilization of some of the ICT tools mentioned in Part 1. The response was s ranked as very frequently, frequently and not at all.

Part 3 considered the level of competence of ICT utilization among lecturers. Responses was very competent, competent and not at all. While the last part (part 4) investigated the motivators and inhibitors to the utilization of ICT tools for effective instructional delivery motivators has 6 questions items while inhibitors also has 6 question items. The responses to this were "yes" or "no". All these were analysed school by school. The instrument was face-validated by experts in test and measurement (Measurement and Evaluation). The reliability was tested using the split-half method. Here the responses on the items are pooled and split into their odd and even numbers and are correlated and a reliability of 0.89.

The questionnaires were administered with the help of the research assistant with a 100% return rate. All the data were analysed using percentages.

RESULTS

Research Question 1

Are ICT tools available for effective instructional delivery in tertiary institutions in Cross River State?

Results in this table 1 showed data base cybercafés are available as indicated by the percentage 50%

Table 1 Availability of ICT tools

No	Items	Uncial (150)		CRSCOE (A) (100)		NUGA POLY (50)		% (100)	
		A	NA	A	NA	A	NA	A	NA
1.	Data-base	150	-	-	100	-	50	50	50
2.	Cyber Cafes	150	-	-	100	-	50	50	50
3.	Multimedia projector	100	50	5	95	2	48	36	64
4.	Lap tops	90	60	5	95	3	47	33	67
5.	TV/Radio projector	-	-	-	-	-	-	-	100
6.	E-library	-	-	-	-	-	-	-	100
7.	Still/Digital Camera	80	70	4	96	3	47	29	71
8.	Video Recorder	60	90	3	97	2	48	22	78
9.	Internet facility	90	60	-	100	-	50	30	70
10.	E-Mail	80	70	10	90	3	47	31	69

Total number 300
Available (A), Not Available (NA)

Table 2 Degree of utilization of ICT tools

No.	Items	Very frequently		Frequently		Not at all		%
		Lecturer	%	Lecturer	%	Lecturer	%	
1.	Data base	50	16.7	150	50.0	100	33.3	100
2.	Cyber cafes	100	33.3	150	50.0	50	16.7	100
3.	Multimedia projector	30	10.0	80	26.7	190	63.3	100
4.	Lap top computer	50	16.7	100	33.3	150	50.0	100
5.	TV/Radio projector	-	-	-	-	-	-	100
6.	E-Library	--	-	-	-	-	-	100
7.	Cameras	50	16.7	100	33.3	150	50.0	100
8.	Video machine	30	10.0	70	23.3	200	66.7	100
9.	Internet facility	100	33.3	80	26.7	120	40.0	100
10.	E-mail	90	30.0	100	33.3	110	36.7	100

Total Number = 300.

respectively. Multimedia projector (power point) followed with 36%, Lap tops has 33%, while e-mail and internet facilities has 31% and 30%, Radio and Television programmes as well as e-Libraries are 100% not available. While video and still cameras has 29% and 22%.

The observation here is that the availability level of ICT tools is high on 2 while the other eight (8) is low. The implication here is that the availability of ICT tools for effective instructional delivery is relatively low, except for lap tops, multimedia projectors and internet facilities.

Research Question 2

What is the degree of utilization of ICT tools for effective instructional delivery?

Results in this table 2 showed that cyber-cafes internet facilities and e-mail were very frequently utilized as indicated by the number of lecturers and the corresponding percentages. Data base cameras, e-mail were also seen to have been frequently used. The percentage of ICT tools not used at all are multimedia projector, video, cameras, internet facilities and lap tops showing 63.3%, 66.7%, 50%, 40% and 50% as indicated above.

It obvious that Laptops computers, e-mail, internet transactions (cyber cafes) are seen to grow among lecturers in terms of utilization but relatively is still low, but institutional level of utilization of some of the ICT tools is encouraging especially in the area of data-base, multimedia projectors, internet and computer connectivity. Institutional Radio/Television stations are yet to spring up.

Research Question 3

What is the use of competence among lecturers in the use of ICT tools for effective instructional delivery?

Result in table 3 showed that 53.3% of lecturers are not ICT tools literate in Unical. CRSCOE and NUGA Poly Ikom have the highest percentage of 64. Here the observation the competency level is high in Unical than the other two institutions (CRSCOE and NUGA Poly, Ikom). From the tab le Unical has 20% very competent,

Table 3 Competence in the use of ICT tools

No.	Institution	Very competent		Competent		Not at all		total
		Lecturers	%	Lecturers	%	Lecturers	%	
1.	Uncial	30	20	40	26.7	80	53.3	150
2.	CRSCOE (A)	16	16	20	20	64	64	100
3.	NUGA Poly Ikom	8	16	10	20	32	64	50

No. = 300.

Table 4 (a) Motivators No. 300

No.	Motivators	Yes	%	No	%
1.	Personal motivation to use ICT tools	180	60	120	40
2.	Opportunities to develop new ideas	200	66.7	100	33.3
3.	Opportunities to improve teaching/learning	260	86.7	40	13.3
4.	Intellectual challenges	250	83.3	50	15.7
5.	Technical support provided by institutions	60	20.0	240	80.0
6.	Over all job satisfaction/professional prestige	200	66.7	100	33.3

Table 4(b) Inhibitors No. 3000

No.	Inhibitors	Yes	%	No	%
1.	Lack of technical support	280	93.3	20	6.7
2.	Lack of interest	150	50	150	50.0
3.	Lack of grant for ICT	285	95	5	5.0
4.	Lack of technical background	180	60	120	40.0
5.	Concern about work load	50	16.7	150	83.3
6.	Lack of awareness	60	20	240	80.0

26.7% competent. It is closely followed by CRSCOE (A) with 16% very competent and 20% competent while NUGA Poly, Ikom has 16% very competent and 20% competent. The implication is that level of competent is low.

Research Question 4

What are the problems affecting the use of ICT tools in the delivery of effective instruction (Motivators/Inhibitors).

Table 4(a) showed that item 1, 2, 3, 4 and 6 has the highest percentage, while item 5 has only 20%, lecturers are motivated to use ICT tools based on item 1, 2, 3, 4, and 6.

Result in Table 4 (b) showed that items 1, 2, 3 and 4 are the inhibitors for lecturers' utilization of ICT tools.

DISCUSSION OF RESULTS

The result of research question one had it that the availability of ICT tools for effective instructional delivery in tertiary institutions in Cross River State is relatively low. Except for Unical that has effective data base, cyber café, internet facilities, multi media projectors and laptops. But these tools are more available at the institutional and departmental levels. In the state College of Education, cyber café and data base are under construction but at the departmental levels cameras, video recorder, multimedia projector (paver point) are available. This means that these tools are available in such a way that lecturers in CRS tertiary institutions can utilize them to enhance effective instructional delivery. The only private institutions under study (Nuga Polytechnic) Ikom has a story very pathetic, as only pockets of individual lecturers could be seen with laptops computers.

The reasons for high presence of ICT tools in Unical are that:

a. Unical entered into partnership with ICT providers like Afri HUB, Zinox and Socket works. But even at this the utilization level is low among the lecturers.

b. Unical is federal University with good financial base and with ICT literate Vice Chancellor, Professor Epoke the sky is the limit.

In the case of CRSCOE (A) the little presence of ICT tools is as a result of the willingness of the College Management and the Provost, Professor Owan Eno to see that the college gets accreditation for the award of degrees, even with the lean resources available to him. The Nuga Poly, Ikom is purely a private affair with no strong financial base.

The result of research questions two which has to do with the degree of utilization. The degree of utilization is not significantly low because acquisition of laptops, multimedia projectors within the department and the institutional levels is an encouraging signal.

The result of research question three that investigated the level of competence in the use of ICT tools among lecturers is a cause for concern. This is because the competence observed among few lecturers is due to the following reasons:

a. Personal motivation.
b. Opportunity to develop new ideas and improve teaching/learning.
c. Professional prestige.
d. Intellectual (academic) challenges and
e. Over all job satisfaction.

But for the lecturers with no competence it could be because of lack of awareness among them; lack of interest; concern about work load; lack of technical background; lack of support from institutions and lack of grant ICT utilization.

This finding is in line with the Akuegwu et al (2011), Yusuf (2005), Enyi (2004 findings on the ICT utilization in universities in Nigeria which has been found to be very low.

CONCLUSION AND RECOMMENDATION

The findings of the study have clearly revealed that the availability and utilization of ICT tools for effective instructional delivery in tertiary institutions in Cross River State is low. This phenomenon will definitely affect the quality of graduates (learners) from these institutions. Inspite of the awareness of the place of ICT tools in instructional delivery it is yet to record same impression among lecturers and institutions in Cross River State. And it is recommended that:

a. ICT tools should be made available by institutions.
b. Lecturers should endeavour to acquire these tools by themselves, since they are integral part of instruction.
c. Government at all levels should endeavour to come up with appropriate ICT policies that will enhance teaching and learning.
d. Workshop, training programmes on ICT tools utilization should be organized among teachers at all levels of education.

REFERENCES

Akuegwu BA, Ntukidem PJ, Ntukjidem EP and Jaga G (2011). *Information and Communication Technology (ICT) facilities Utilization for Quality Instructional Service delivery Among University lecturers in Nigeria*

Ayo CK (2001). *Information Technology Trends and Applications in Science and Business.* Concept Publications, Lagos.

Akawu AB (2010). *Educational Communication Technology Media and Utilization.* University of Calabar Printing Press.

Aginam E (2006). *Nigeria higher education has less 5% ICT application.* Retrieved from file http://www vanguard ng.com./article/hmt on 11/2/2007.

Bamiro O and Liverpool S (2002). ICT and University Administration: The Ibadan and Jos examples. *The University Administrator* 1(4): 29-39.

Enyi BI (2004). An Assessment of Availability and Utilization of Resources for Distance Education in Nigerian Universities. *An M.Ed. (Edu-Tech) Project, Dept. of CSET, Faculty of Education, Unilorin.*

Ololuybe NP (2006). Appraising the relationship between ICT usage and integration and the standard of teacher education programmes in a developing economy. *Inter. J. Edu. and Devel. ICT* (Online) 2 (3): 194-212.

Okon A and Jacob E (2002). Use of Information Technology by Academic in Selected Universities in Nigeria. *Global J. Maths Sci.* 2(1): 57-63.

Ramboll PLS (2004). Studies in the Context of the e-learning initiative. Virtual modes of European Universities. *Draft final Report to the E.U. Commission.* Capenhagen: DF Education and Culture.

The Guardian Editorial (2006; August 1). The NUC Verdict on Nigeria Universities. *The Guardian p. 16.*

World Bank (2002). *Enhancing learning opportunities in Africa.* Washington D.C. International Bank for Reconstruction and Development.

Yusuf MO (2005). Integrating ICTs in Nigeria tertiary education. *The African Symposium.* An online Journal of African Educational Research Networks 5 (2): 43-50.