

UTILIZATION OF ICT TOOLS IN TEACHING AND LEARNING IN PRIMARY SCHOOLS IN MINNA METROPOLIS OF NIGERIA STATE NIGERIA
BY

ADAMU, Z. E. (PhD)¹; CHADO, A. M. (PhD)²; & GIMBA, R. W. (PhD)³

^{1, 2, & 3}FEDERAL UNIVERSITY OF TECHNOLOGY MINNA,

¹DEPARTMENT OF EDUCATIONAL TECHNOLOGY

^{2&3}DEPARTMENT OF SCIENCE EDUCATION

+234-803-632-8687; ¹+234-803-596-5345² & +234-803-285-3603³

adamuz@yahoo.com; ¹chadoamina@gmail.com² & ramatu.gimba@futminna.edu.ng³

ABSTRACT

This paper investigated the utilization of ICT tools in teaching and learning in primary schools in Minna metropolis. The study was a description survey. The population of the study comprised of all the head teachers of both public and private primary schools in Minna metropolis. A simple size of 400 head teachers and teachers was randomly selected. A self designed questionnaire was used to collect data from the respondents. Data was analyzed using frequency count and percentages. Results show that the extents of availability utilization and accessibility of ICT tools in instructional delivery are very poor. Poor power supply, lack of knowledgeable ICT support staff, high cost of ICT equipment and accessories, lack of internet connectivity among others are some of the perceived constraints facing the use of ICT tools in instructional delivery. The alternative source of power, establishment of ICT laboratory as a criterion for registration of schools, periodic in service training of teachers on ICT application.

Keyword: ICT, Teaching and Learning

Introduction

Teaching and learning had become not only very interesting but also entertaining, with the introduction and use information and communication technology ICT tools in instructional delivery. Sorry the globalization of education, emphasis is been shifted from the traditions k learning approach (face to face teaching and learning) to E – learning the delivery and administration of learning opportunities and support via computer, net worked and web based technology to help Indian m individual performance and development (Pollard and Hillage, 2001). Instructional delivery at the primary school level can be very challenging as children not only learn by what they see hear or do but their interests need to be facilitated and sustained. The primary school is teacher is faced with the task of providing the project m outlets through which pupils learn. One of the things tools is that primary school teacher employ to enhance y pupils interest cognition, retention; and

manipulative skills are popularity referred to as ICT tools.

Instructional delivery is the actual teaching or execution of instruction in the class room. The way and manner the teacher deliver's his lesson will go long way towards facilitating and sustaining pupil's interest in the lesson. The method and materials he employs in his lesson delivery will increase the productivity and retention rate of learners. With ICT tools, the teacher appears to be multi sensory organs of the learners. The teacher brings to life his lesson by creating a learning environment where children not only see, hear but also participate in the lesson. When the primary schools teacher employs this Avenue, he is increasing the productivity and retention of pupils because children remember 20% of what they see, 40% of what they see and hear but about 75% of what they see and hear and do simultaneously (Molnar, 2012).

According to Fisher (2005), ICT as a tool has the potential to transform the way that education is delivered. It can facilitate the

differentiation and individualization in Education. It makes it possible to tailor both the content and the presentation of the subject matter to the individual background, experience and needs of students Fisher. (2005) contributing to this. Schiller and Tillett. (2004) assert that ICT enhances what is possible by amplifying what teachers are able to do, by providing an entering point to content and enquires that were not possible without the use of ICT, by extending what students are able to produce as a result of their investigations, and finally by providing teachers with the opportunity to become learners again.

Integration and utilization of ICT tools in lesson delivery at the primary schools level will help to produce better pupils who can confidently compete with others both within and outside the immediate environment. ICT tools that the primary school teachers could Neutralize in lesson delivery include the desktop, laptop, notebook, handled computers, digital cameras, Local Area Network working, Bluetooth, the internet, include computing the World Wide Web, streaming, DVS, Television, video player, Radio (Tape Recorder), Multimedia Projector, Printer, Scanner Satellites Disc, Interactive White Board, Electronic Notice Board among others, an applications such as Word Processor, spread sheet, tutorials, simulations, email, digital libraries and video conferencing in primary schools in Minna metropolis of Niger State.

Statement of the Problem

Although ICT is taught today in Institutions of learning as a subject as well as course of study, many of the institutions of learning lack the facilities for effective teaching of the course/subject. Thus the course is move of a theoretical course than a practical one. At the primary school level where ICT is thought as a computer science/education, pupils learn it without a single computer in sight. Some of the schools visited by researchers actually have computer laboratories but do not allow their people get access to them for fear of damage, if a school could not allow it's people the use of its

ICT laboratory in the teaching of the subject, could it allow a classroom teacher to utilize these ICT resources in his/her lesson delivery? The study seeks therefore to establish the level of availability and neutralization of ICT tools and the constraints to their use in the teaching and learning process.

Research Questions

The researchers ask the following research questions to guide the study.

1. To what extent are ICT tools available in primary schools in Minna metropolis in Niger state?
2. To what extent are the tools utilized in teaching and learning?
3. To what extent are the ICT tools made accessible to both teachers and pupils for teaching and learning?
4. What are the constraints facing the neutralization of ICT tools in teaching and learning?

Methodology

The designs for this study were descriptive survey research. The population for the study is made up of all the teachers and head teachers of both public and private primary schools in Minna Metropolis. A sample size of 400 teachers and head teachers was randomly selected for the study. A self designed questionnaire was used to collect data for the study. The questionnaire was validated by lecturers in the department of measurement and evaluation, Ibrahim Badamasi University Lapai, the cronbach Alpha was used to determine the reliability of the instrument. The reliability coefficient of the measurement was 0.85. The researcher used Face to Face method to administrate the questionnaires to the respondent. The completed questionnaires were immediately collected by the researcher at the spot. Data was collected, presented and analyzed using frequency count in percentage.

Research Question 1:

To what extent are ICT tools available in Primary schools in Minna Metropolis?

Table 1: Extent of availability of ICT tools in primary schools Minna metropolis?

ITEM	NG	%	G.EXT	%	MENT	%	P.EXT	%	V.EXT	%
Desktop computer	400	0	0	0	30	7.5	70	17.5	300	75
Laptop	400	0	0	0	0	0	0	0	400	100
Notebook computer	400	0	0	0	0	0	0	0	400	100
Handheld computer	400	0	0	0	0	0	0	0	400	100
Digital computer	400	0	0	0	0	0	0	0	400	100
Local Area Network	400	0	0	0	0	0	0	0	400	100
Bluetooth	400	0	0	0	0	0	0	0	400	100
Internet	400	0	0	0	0	0	10	2.5	390	97.5
Television	400	0	0	0	24	6	50	12.5	326	81.5
Video Player	400	0	0	0	20	5	60	15	320	80
Radio(Tape recorder)	400	0	0	0	65	16.3	132	22	203	50.8
Multimedia Projector	400	0	0	0	0	0	0	0	400	100
Printer	400	0	0	0	10	2.5	22	5.5	368	92
Scanner	400	0	0	0	0	0	0	0	400	100
Satellite Disc	400	0	0	0	0	0	0	0	400	100
Electronic Notice Board	400	0	0	0	0	0	0	0	400	100
Photocopy Machine	400	0	0	0	0	0	60	15	240	85
Video conferencing	400	0	0	0	0	0	0	0	400	100
Digital Library	400	0	0	0	0	0	0	0	400	100
Word Processors	400	0	0	0	49	12.3	61	15.2	290	72.5
Spreadsheet	400	0	0	0	23	5.8	44	11	333	83.7
Email	400	0	0	0	23	5.8	44	11	333	83.7

Table 1 above shows that the twenty one ICT tools investigated were available to a very poor extent tape recorder, word processors, desktop computer, television, spreadsheets, and video player received responses of 16.3, 12.3%, 7.5%, 6%, 5.8% and 5% respectively indicating moderate extent of available. This shows that both the government and proprietors of private school in Minna Metropolis has not really done much towards the provision of the

needed ICT tools to improve teaching and learning in public primary schools and private primary schools in the metropolis Ohansaya (2009) identifies lack of sufficient computer system to go round the students as one of the limitations of ICT based instruction in the classroom. The unavailability of these ITC tools in schools may hamper teachers and pupils use of them as they could only be used if available.

Research Question 2:

To what extent are these tools utilized in teaching and learning?

Table 2: Extent of utilization of ICT tools in teaching and learning primary schools

ITEM	NO	V.G EXT	%	G. EXT	%	MENT	%	P EXT	%	V.P EXT
Desktop computer	400	0	0	0	0	0	0	0	400	100
laptop	400	0	0	0	0	0	0	0	400	100
Notebook computer	400	0	0	0	0	0	0	0	400	100
Handheld computer	400	0	0	0	0	0	0	0	400	100
Digital computer	400	0	0	0	0	0	0	0	400	100
Local Area Network	400	0	0	0	0	0	0	0	400	100
Bluetooth	400	0	0	0	0	0	0	0	400	100
Internet	400	0	0	0	0	0	0	0	400	100
Television	400	0	0	0	0	0	0	0	400	100
Video Player	400	0	0	0	0	0	0	0	400	100
Radio(Tape recorder)	400	0	0	0	0	0	0	0	400	100
Multimedia Projector	400	0	0	0	0	0	0	0	400	100
Printer	400	0	0	0	0	0	0	0	400	100
Scanner	400	0	0	0	0	0	0	0	400	100
Satellite Disc	400	0	0	0	0	0	0	0	400	100
Electronic Notice Board	400	0	0	0	0	0	0	0	400	100
Photocopy Machine	400	0	0	0	0	0	0	0	400	100
Video conferencing	400	0	0	0	0	0	0	0	400	100
Digital Library	400	0	0	0	0	0	0	0	400	100
Word Processors	400	0	0	0	0	0	0	0	400	100
Spreadsheet	400	0	0	0	0	0	0	0	400	100
Email	400	0	0	0	0	0	0	0	400	100

In Table 2 above, the data indicates that the extent of utilization of ICT tools for teaching and learning in primary schools in Minna metropolis is very poor. This is so

because utilization and availability are closely associated. You can only utilize available resources.

Research Question 3:

To what extent are the ICT tools made accessible to both teachers and pupils ?

ITEM	NO	N.G EXT	%	G. EXT	%	MENT	%	P EXT	%	V.P EXT	%
Desktop computer	400	0	0	0	0	25	6.2	43	10.8	332	83
Laptop	400	0	0	0	0	0	0	0	0	400	100
Notebook computer	400	0	0	0	0	0	0	0	0	400	100
Handheld computer	400	0	0	0	0	0	0	0	0	400	100
Digital computer	400	0	0	0	0	0	0	0	0	400	100
Local Area Network	400	0	0	0	0	0	0	0	0	400	100
Bluetooth	400	0	0	0	0	0	0	0	0	396	99
Internet	400	0	0	0	0	0	5	4	1	337	84.2
Television	400	0	0	0	0	20	3.8	43	10.8	340	85
Video Player	400	0	0	0	0	15	13	45	11.2	250	62.5
Radio(Tape recorder)	400	0	0	0	0	52	0	98	24.5	400	100
Multimedia Projector	400	0	0	0	0	0	1	0	0	378	94.5
Printer	400	0	0	0	0	4	0	18	4.5	400	100
Scanner	400	0	0	0	0	0	0	0	0	400	100
Satellite Disc	400	0	0	0	0	0	0	0	0	400	100
Electronic Notice Board	400	0	0	0	0	0	0	0	0	400	100
Photocopy Machine	400	0	0	0	0	0	12	3	0	12	340
Video conferencing	400	0	0	0	0	0	0	0	48	400	100
Digital Library	400	0	0	0	0	0	0	0	0	400	100
Word Processors	400	0	0	0	0	45	11.3	54	13.5	301	75.2
Spreadsheet	400	0	0	0	0	15	3.8	32	8	353	88.2
Email	400	0	0	0	0	0	0	0	0	400	100

In table 3 above, all the ICT tools (except radio and word processor) revied response of over 80% accessibility at a very poor extent of accessibility of ICT tools for

teaching and learning in primary schools in Minna metropolis is very poor. This is because teachers and pupils can only access ICT tools if they are available.

Research Question 4:

What are the constraints facing the utilization of ICT tools in teaching and learning?

Table 4:

S/N	ITEM	NO	AGREE	%	DISAGREE	%
1	Poor Electric Power Supply	400	331	82.8	69	17.2
2	Lack of knowledgeable ICT Support Staff	400	313	78.3	87	21.7
3	Inadequate Trained Teachers in the use of ICT	400	365	91.3	35	8.7
4	High cost of ICT Equipments and Accessories	400	302	75.5	98	24.5
5	Lack of interest on the part of Teachers and Pupils	400	198	49.5	202	atsin
6	Government and Proprietors non committal attitude to ICT	245	245	61.3	155	38.7
7	Inability to replace broken down equipment and facilities	400	292	73	108	27
8	Lack of fund to procure ICT tools	400	348	87	52	13
9	Environmental problems such as building convenience and Security Lapses.	400	296	74	104	26
10	Lack of internet connectivity	400	365	91.3	35	8.7

Constraints facing the utilization of ICT tools in teaching and learning.

Data presented in table 4 above shows that: poor electric power supply received response of 83% indicating a very serious constraint to ICT utilization. This does not differ with Onasanya (2009) and Kosoko-oyedeko and Adedaja (2012), who observe that electricity failure as a major obstruction to ICT-based instruction in the classroom. Lack of knowledgeable teachers on the use of ICT received 78.3% and 91.3% ratings respectively. These are supported by Onasanya (2009) assertion that lack of adequate personnel or specialists and lack of training workshops and seminars on the use of computer for instruction are major limitations of ICT based instruction in the classroom.

High cost of ICT equipment and accessories was rated 76% indicating that exorbitant prices of these equipment militate against the provision of ICT equipment in primary schools. This is supported by Onasanya (2009) who identified lack of sufficient computer system to go round

constraint to ICT based instruction in the classroom. Lack of interest on the part of teachers received 50%. Onasanya (2009) asserts that laziness on the part of some teachers to learn ICT use is a limitation to ICT in teaching.

Governments and proprietors non-committed attitude to ICT provision was rated 61.3% showing that school proprietors and government are non-committed towards the provision of ICT based instruction in schools.

Inability to replace broken down equipment and facilities was rated 73% most often, broken ICT equipment and facilities failed to be replaced with new ones or even repaired thus making the available ones insufficient, lack of funds to procure ICT tools received 87% rating. Onasanya (2009) identifies lack of funds to procure computers as a constraint to ICT based instructions in classroom.

Environmental problems such as building convenience and security lapses were rated 74%, showing that insecurity and lack of accommodation where ICT could be

conveniently housed and constraints to the effective utilization of ICT tools in primary schools. This is in line with Onasanya (2009) who identifies environmental problems such as building, convenience and security lapses as a limitation ICT based instruction in the classroom. Lack of internet Connectivity received 91.3% rating. This indicates that most of the schools do not have internet connectivity hence teachers and pupils could not access the internet. The internet, Bluetooth, Local Area Network, video conferencing among others, require internet connectivity and could not be utilized in the teaching learning process unless they are connected to an internet provider. This is supported by an early study by Kosoko-Oyedeko and Adedoja (2012), which reveals that 72% of their respondents indicate lack of internet connectivity as a constraint to the use of Web Based Tools in the teaching of CRS.

Recommendations

Based on the findings of this study, the researcher recommends that an alternate source of power supply should be pursued by the Government to alleviate the incessant power outage in the country. Curriculum planners should revisit and redesign the curriculum to incorporate the use of ICT tools in instructional delivery. That ICT tools should be provided by the Government and school proprietors and that they should ensure that these resources are utilized and accessed by teachers and pupils. That ministry of Education should set criteria for registration for private schools, the establishment of an ICT laboratory and pronouncements of ICT resources to enhance instructional delivery. That every teacher must be computer literate. Finally, that they should be periodic in service training for teachers or ICT applicants and

utilization. This will provide the teachers with practical and functional knowledge of ICT tools for ICT based instruction in the classroom.

References

- Blurton C. (1999), New dimension of ICT-use in Education UNESCO : World Communication and Information Report, 1999. Available at <http://www.unesco.org/education/eduproj/iwfdi/edict.pdf>
- Fisher, T (2005): Technology Means nothing without human online available at <http://www.tes.co.uk/search/story/19/20529>
- ICT in Education. Available at <http://www.en.wiki.books.org/wiki/ict-in-educational/definition> of terms.
- Kosoko-oyedeko and Adedoja (2012). sensitising Nigeria secondary school teachers on the available web based Tool suitable for instructional delivery in Christian Religious Studies. retrieved August 10, 2012.
- Milken Exchange an Educational Technology (1999), will New Teachers be prepared to teach in A digital Age ? Santa Monica: milken Family Foundation <http://www.MFF.org/pubs/ME/544/dF>
- Onasanya, S.A (2009), Innovation in Teaching/Learning V:Information and Communication Technology ICT in Education Available at <http://www.unilorin.edu.ng/publication/onasanya/ICT%20in%20Edu.PdF>