Macrothink Institute™

Journal of Sociological Research
ISSN 1948-5468
2012, Vol. 3, No. 2

A Comparative Study of Computer Literacy in Urban and Rural Primary Schools in Rivers State of Nigeria

Achuonye Keziah Akuoma,
Department of Curriculum Studies/ Instructional Technology,
Ignatius Ajuru University of Education,
Port Harcourt, Rivers State.
Nigeria.

Accepted: November 02, 2012 Published: December 17, 2012
Doi:10.5296/jsr.v3i2.2893 URL: http://dx.doi.org/10.5296/jsr.v3i2.2893

ABSTRACT

Aims: To comparatively investigate factors affecting computer literacy in urban and rural primary schools in Nigeria.
Study design: This study was a descriptive survey.
Place and Duration of Study: Port Harcourt and Obiakpor (representing urban areas), and Asari-Toru and Gokana (representing rural areas) of Rivers State, Nigeria; between March and June 2011.
Methodology: A total of 480 primary school teachers were drawn from the four Local Government Areas. An eighteen-item questionnaire, 'Computer Literacy Inventory' (CLI) was developed by the researcher and used for data collection. CLI was distributed and collected at teachers' workshop organized by the State Ministry of Education. Analysis was through simple tables of frequency counts and percentages
Results: Out of 240 respondents from rural and urban areas respectively, only 80(33%) rural respondents indicated that there are computers in their schools while 160(67%) were on the contrary, but all the 240(100%) urban respondents admitted that there are computers in the urban schools. The 80(33%) rural respondents that have computers in their schools responded to issues on teachers' accessibility to computers as never (0(0%) rarely (16(20%), seldom (40(50%) and often (24(30%), always (0). Similarly, their urban colleagues responded: never (16(7%), rarely (63(26%), seldom (96(40%), often (65(27%), and always (0(0%). 184(77%) urban teachers affirmed their possession of computer skills and only 56(23%) did not; while in the rural schools only 40(17%) said they have the skill and the rest 200(83%) admitted that they lack the skill. Rural respondents indicated total absence of computer practical sessions while only 56(23%) urban teachers affirmed to practical computer lessons. The teaching strategy is mostly lecture-based as attested by 240(100%) rural teachers and 184(77%) urban counterparts. On the issue of learning environment, every Computer Science class in rural schools takes place in the classroom 240(100%) and never in any designated equipped room called Computer Lab. This case is only slightly different in urban areas because 32(13%) use

computer lab while the majority, 208(87%), do not. Concerning socio-economic background of the class, only 39(16%) rural pupils come from rich homes while majority of them 88(37%) and 113(47%) come from poor and very poor families respectively, while majority (136(57%) of urban pupils belong to rich families with others coming from poor 72(30%) and very poor 32(13%) homes.

Conclusion: Challenges retarding computer literacy in Nigerian Primary schools, particularly in the rural areas, are enormous. This reveals the need for urgent interventions from the government and public spirited organizations and individuals. Government should not pay lip service to ICT-policies to afford the teeming population of Nigerian children the opportunity to meet up with rest of the world.

Keywords: ***Computer Literacy. Rural-Urban Areas. Primary Schools. Teaching Methods. Learning Environment***

INTRODUCTION

Literacy is not just the ability to read and write. It extends to effective application of all those activities in which literacy is normally assumed (Abimbade, 1996). Such application could be on computer, hence the terminology, 'computer literacy'. According to the Psychology Wiki, the definition of computer literacy varies from group to group and could mean the knowledge and ability to use computers and technology efficiently; the comfort level someone has with using computer programmes and other applications that are associated with computers; knowing how computers work and operate; or having basic computer skills. Computer literacy not only associates with computer awareness, but also extends to ability to tell a computer what to do and understand when it is done (Esan, 1996). It is, therefore, a skill that enables an individual enjoy the potentials of ICT, a subject classified as a global resolution, and of great significance to all humanity (Uwaje, 2000).

Undoubtedly, ICT is one of the greatest change agents of this century, and promises to play this role even more dramatically in the coming decades. It is changing every aspect of human activity including communication, trade, manufacturing, services, culture, entertainment,

education, research, national defense, and global security. Teachers realize the tremendous potential computer technology can bring to teaching and learning (Ron, 1998). Most of the developed countries have exploited the potentials of ICT to transform their educational landscape at tertiary, secondary and even primary levels particularly through the instructional process (Kosakowski, 1998). Generally, ICT holds out the opportunity to revolutionize pedagogical methods, expand access to quality education, and improve the management of education systems (World Bank, 2002). In Nigeria, ICT is further seen as an opportunity to overcome historical disabilities and once again become the master of her destiny, a tool that will enable Nigeria to achieve the goal of becoming a strong, prosperous and self-confident nation (Isoun, 2003).

However, many Nigerian are lagging behind in ICT skills due to their inability to apply ICT resources (Rahman, 2002), to deal with a variety of problems; there are little usage of computers in Nigeria schools (Aloba, 2012). As asserted by Josiah, Pam and Okooboh (2003), the Nigerian populace must be educated in the use of computer to communicate and relate effectively with the rest of the world. The National Policy on Computer Literacy enacted and launched in 1988 by the Federal Government of Nigeria suggests the following curriculum content:

- a basic appreciation of how computer works,
- understanding of basic principles of computer, and
- hands-on experience using pre-programmed packages which are relevant to the interest of the students as teaching aids in different subjects (Abimbade, 1999)

This policy notwithstanding, studies such as Josiah et.al (2003), and Kalu & Ekwueme (2003), have proved that many Nigerians are yet to be computer literate, hence, Nigeria is decades behind its counterparts in embracing the use of computer in primary and secondary classrooms which are the bed rock of every nation's education (Ezekute, 2000). This setback in effective utilization of computers in Nigerian schools is attributed to a number of factors including insufficient supply and maintenance of computers in schools and poor computer literacy skill among teachers. Many teachers are aware of the great potentials of computer (Landu, 2003;), but few of them, particularly primary schoolteachers, possess the requisite computer literacy skills (Babalola, Ibitoye & Eunbayo, 2002; Chukwu & Afolabi, 2003; Yusufu, 2005), and, worse still, very few make use of ICT in their teaching (Lawal, Ahmadu & Dogara, 2003). Apart from low computer literacy, other factors identified are inadequate number of computers and high class population in schools (Josiah et.al 2003; National Education Research Development Council (NERDC), 2007). These are peculiar to Nigeria as similar issues have been earlier identified in other parts of the world. For instance, Ron's (1998) work on factors affecting the use of computers in schools revealed accessibility of the hardware, and lack of administrative support. Furthermore, Ron citing other studies like Stallard (1998), Roszell (1995), Ginsberg and McCormack (1998), Morton 1997; Brand (1998), stressed other five factors: the availability of time for teachers to prepare to use computers in instruction; the availability of high quality software; the availability of hardware; and personal knowledge about computers.

Nigeria has the largest population in Africa, estimated at 130 million in 2005. The most recent education data for Nigeria collected in a Demographic and Health Survey (DHS) in 2003 showed 60.1% of all Nigerian children of primary school age were attending primary school at the time of the survey (UNICEF Nigeria, 2005). The increased enrolment rates due to the free education programme, Universal Basic Education (UBE), have created challenges in ensuring quality education and satisfactory learning achievement as resources are spread more thinly across a growing population of students (UNICEF Nigeria, 2005). According to the UNICEF document, it is not rare to see cases of 100 pupils per teacher or students sitting under trees outside the school building because of the lack of classrooms. Therefore, number of schools' facilities and teachers available for Basic Education remain inadequate for the eligible number of children and youth**hs** (Anao, 2003; Yoloye & Adekawanishe, 2005; Torunarigha, 2011), particularly in urban areas where there is population pressure. This issue of high population has been linked to poor computer applications in schools (Onwuagboke & Ukegbu, 2010) where computers are generally used for typing question papers and office documents (Ajuzie & Alugbuo, 2012).

As a result of inadequate supply of computers to serve the large class size, teaching method is very much of lecture-format, and students lack opportunity to manipulate computers (Kalu & Ekwueme, 2003). However, pupils' ability to grasp computer literacy skills has been associated with learner characteristics such as reading with understanding, conveying meaning through speech, being mentally alert, having visual acuity, and lacking hearing deformity (Anaekwe, 2003), and poor learning environment such as limited space and poor electricity supply (Ajuzie & Alugbuo, 2012). Under these conditions, teaching and learning cannot be effective; hence, the learning outcomes in schools are usually below expectation. It is against this background, and scarcity of research work on computer literacy at primary school level, that this study is designed to examine the application of computers in primary schools in Rivers State of Nigeria, considering the peculiarities of the urban and rural areas.

PROBLEM STATEMENT

Over the time, Nigeria's exponential population growth has put immense pressure on the country's resources and on already overstretched public services and infrastructure. With children under 15 years of age accounting for about 45 per cent of the country's population, the burden on education and other sectors has become overwhelming. Linked to this, is disparity between rural and urban dwellers. The attendance rate is strongly linked to household wealth and area of residence. Children in urban areas had a higher primary Net Attendance Ratios (NAR) (69.5%) than children in rural areas (55.7%) (Friedrich, 2005). Poor families in which only two out of five children were in school (primary NAR 40.4%) dominate rural areas. Primary education is the bedrock of education and human capacity development, hence, the need to groom pupils adequately in order to equip them to function effectively in a modern age of science and technology (FRN, 2004). Potentials of ICT are so enormous and indispensible that nobody, no country or group of people can afford to be left

behind. However, effective computer literacy is found to be hindered by certain factors such as availability and accessibility of computers to classrooms, teacher quality and teaching method, learning environment and learner characteristics. Most of these findings were based on secondary and tertiary schools, and mainly in the urban setting. Not much has been done in primary schools and rural areas. Is it not possible for primary school pupils to become computer literates? How does each of those factors affect computer literacy in primary schools? Are the effects the same in urban and rural schools? These and many more questions necessitated this study.

PURPOSE OF THE STUDY

The general purpose of this study is to investigate the extent certain factors affect the acquisition of computer literacy by primary school pupils in urban and rural communities?

Specifically, the study seeks to examine the extent the following factors affect the teaching and learning of computer skills in rural and urban schools:

a. availability of computers in rural and urban primary schools.
b. accessibility of computers to teacher and pupils
c. teachers' computer literacy skills
d. predominantly used teaching method
e. state of learning environment for computer literacy classes
f. learner characteristics

RESEARCH QUESTIONS

The study was guided by the following research questions:

a. to what extent are computers available in rural and urban primary schools
b. to what extent are computers accessible for classroom instructions in rural and urban schools
c. to what extent are rural and urban primary school teachers computer literate
d. what is the predominant teaching method for teaching computer skills in rural and urban schools
e. how conducive is learning environment for acquiring computer skills in rural and urban schools
f. how appropriate are the characteristics of rural and urban learners to computer literacy programme.

METHODOLOGY

The study was a descriptive survey that involved collection of data through questionnaire for the purposes of describing the existing conditions in rural and urban primary schools. The target population was all primary schools teachers in Rivers State. Through purposive sampling technique, four Local Government Areas (LGAs) were selected and used as sample. The urban areas used were Port Harcourt and Obiakpor LGAs, while Asari-Toru and Gokana LGAs were selected as the rural counterparts. Through simple random technique, 10 schools were selected from each LGA giving a total of 40 schools (i.e. 20 rural and 20 urban schools)

used for the study. Through simple stratified random sampling, 12 teachers were selected and used from each school representing 2 teachers from each class of Basics 1- 6 (aged 6-11years) of each school. This summed up to 240 rural and 240 urban primary school teachers used for the study. The total number of primary school teachers used for this study was therefore 480.

An eighteen-item questionnaire 'Computer Literacy Inventory (CLI)' was developed by the researchers and used for data collection. Three items were derived from each research questions. Validation of the instrument was through two measurement experts in the faculty of education. Their scrutiny of the instrument led to the identification of areas of the instrument that needed restructuring and other forms of modification, and these were done to their full satisfaction. The instrument was administered on 50 primary school teachers from LGA other than the ones used for this study. The internal consistency was determined using Cronbach Alpha. A reliability index of 0.72 was obtained. With this high result, the instrument was considered reliable and adequate for the study.

The researcher targeted teachers' workshops organized by the State Government on different dates at various LGA headquarters. The researcher sought and obtained the cooperation of the workshop organizers who granted her access to the attendance list to select and administer the CLI on 480 teachers from the LGAs. Through clear explanation of the objectives of the research work, the researcher also sought and obtained the consent of the respondents. To ensure that all the questionnaires distributed were collected, the researcher employed the assistance of the workshop organizers who were staff of the State Ministry of Education. This procedure was repeated in each of the four local government areas used for this study.

Data collected were analyzed using simple tables of frequency counts and percentages.

3. results and discussion

The findings of the study were presented in line with the research questions on Tables 1–6 as follows:

Research Question 1: To what extent are computers available in primary schools in the rural areas and those of urban areas?

Table 1: Availability of Computers in Rural and Urban Primary Schools

No. of Respondents & Responses (%) n = 480

s/no	*Items*	*Rural (240)*	*Urban (240)*
a.	Do you have computers in your school?	Yes = 80(33%) No = 160 (67%)	Yes =240(100%) No = 0(0%)
b.	If 'Yes', what is the ratio of computer to the class population?	5:1 = 0(0%) 10:1 = 0(0%) 20:1 = 0(0%) Above 20:1= 80 (100%)	5:1 = 0(0%) 10:1 = 0(0%) 20:1 = 32(13%) Above 20:1= 208(87%)

c.	Do you have a personal computer?	Yes=16(7%) No = 224(93%)	Yes=96(40%) No = 144(60%)

(% round off to the nearest whole number)

With reference to the research question on computer availability in schools, Table 1 above shows that only 80(33%) respondents indicated that there are computers in the rural schools while 160(67%) were on the contrary, but all the 240(100%) urban respondents admitted that there are computers in the urban schools. This shows that more primary schools in urban areas have computers than those in the rural areas. However, the ratio of pupils per computer is similar in both areas, in that, it is 'above 20' in all of the few rural schools (80(100%) that have computer(s), and in the majority (208(87%) of urban schools. The ratio of 20:1(32(13%) is comparatively small. This shows that the ratio of pupils per computer is high in both rural and urban schools. The table further reveals that 96(40%) urban teachers possess Personal Computers (PCs) which is comparatively higher than those of the rural schools where only 16(7%) have PCs, and 224(93%) do not. This notwithstanding, the number, 144(60%), of urban teachers without PCs is an indication that many primary school teachers, whether rural or urban, do not have PCs.

Research Question 2: To what extent are computers accessible for use by teachers and pupils in rural and urban primary schools?

Table 2: Accessibility of computer for instructional purposes

No. of Respondents & Responses (%) n = 480

s/no	***Items***	***Rural (80)***	***Urban (240)***
a.	How often are you allowed to use computer?	Never = 0(0%) Rarely= 16(20%) Seldom = 40(50%) Often= 24(30%) Always= 0(0%)	Never = 16(7%) Rarely= 63(26%) Seldom = 96(40%) Often= 65(27%) Always= 0(0%)
b.	How often do your pupils use computer?	Never =48(60%) Rarely= 24(30%) Seldom = 8(10%) Often= 0(0%) Always= 0(0%)	Never = 56(23%) Rarely= 96(40%) Seldom = 64(27%) Often= 24(10%) Always= 0(0%)
c.	What are your school's computers mostly used for?	Office work= 80(100%) Class Teaching= 0(0%) Individual Use= 0(0%)	Office work= 184(77%) Class Teaching= 56(23%) Individual Use= 0(0%)

(% round off to the nearest whole number)

Items concerning accessibility to a computer presented on Table 2 above indicated low teacher-student accessibility to computers in both rural and urban schools. The 80(33%) rural respondents that have computers in their schools responded to issues on teachers' accessibility as never (0(0%) rarely (16(20%), seldom (40(50%) and often (24(30%), always

(0). Similarly, their urban colleagues responded: never (16(7%), rarely (63(26%), seldom (96(40%), often (65(27%), and always (0(0%). This is an indication that accessibility to computer by primary school teachers is generally low, not minding the location. Accessibility on the part of the pupils is even worse as rural respondents reported never (48(60%)), rarely (24(30%) and seldom (8(10%). A similar case was observed in the responses obtained from the urban school: never (56(23%), rarely (96(40%), seldom (64(27%), often (24(10%) and always (0). Furthermore, the table revealed that school computers in both areas are mainly used for office work as shown by all the 80 rural respondents that have computers in their school, and 184(77%) of the urban respondents. Only 56(23%) urban respondents indicated that computers are used for instructional purposes, but never (0) for individual use in both areas.

Research Question 3: How many teachers in rural and urban primary schools possess computer literacy skills?

Table 3: Number of computer literate teachers in schools

No. of Respondents & Responses (%) n = 480

s/no	***Items***	***Rural (240)***	***Urban (240)***
a.	Are you computer literate?	Yes = 40(17%) No = 200(83%)	Yes =184(77%) No =56(23%)
b.	If 'Yes', how did you acquire the skill?	Pre-service training=0 In-service training = 8(20%) Self-effort = 32(80%)	Pre-service training= 0 In-service training=48(26%) Self-effort= 136(74%)
c.	Do you think computer literacy skill is necessary for teacher effectiveness in Primary Schools?	Yes=136(57%) No = 39(16%) Not sure=65(27%)	Yes=240(100%) No = 0(0%) Not sure = 0(0%)

(% round off to the nearest whole number)

As shown on Table 3, more teachers in urban areas claim to be computer literate than their counterparts in rural area. 184(77%) urban teachers affirmed their possession of computer skills and only 56(23%) did not; while in the rural schools only 40(17%) said they have the skill and the rest 200(83%) admitted that they lack the skill. On the issue of source of acquisition, the table showed that the skill was mostly acquired through self-effort (32(80%) rural and 136(74%) urban respondents) less from pre-service training (8(20% rural respondents, and 48(26%) urban counterparts) but none from pre-service training. It is however interesting to observe from the same table that majority respondents on both sides (17(57%) rural and 30(100%) urban) affirmed the importance of computer literacy skills to teacher effectiveness.

Research Question 4: Which teaching method is most commonly used in teaching computer skills in rural and urban primary schools?

Table 4: Teaching Method for Computer Literacy

No. of Respondents & Responses (%) n = 480

s/no	*Items*	*Rural (240)*	*Urban (240)*
a.	Do you have computer science/technology as a subject in your school curriculum?	Yes = 240(100%) No = 0(0%)	Yes = 240(100%) No = 0(0%)
b.	As a primary schoolteacher, you are expected to teach all subjects to your class, who teaches your class computer tech.?	I teach = 216(90%) Computer Specialist= 0(0%) Any computer literate Colleague=24(10%)	I teach =232(97%) Computer Specialist= 0(0%) Any computer literate Colleague= 8(3%)
c.	Which teaching method do you use most often?	Lecture/telling= 240(100%) Demonstration/practical=0(0%)	Lecture/telling= 184(77%) Demonstration/practical=56(23%)

(% round off to the nearest whole number)

As shown on Table 4, Computer Technology/Science is a subject in both rural and urban primary schools as affirmed by all the respondents (240(100%) rural and 240(100%) urban). Similarly, the subject is mostly taught by the class teachers, whether or not they are computer literate. This is drawn from the responses of 216(90%) rural and 232(97%) of urban teachers who said they teach their classes Computer Science. Only 24(10%) rural and 8(3%) urban teachers allow any of their colleagues who are computer literate to handle the subject for them. In both rural and urban areas, computer science specialists do not teach the subject. It is therefore, not surprising to observe from this table that the practical sessions are absent in rural schools and only 56(23%) in urban ones. The teaching strategy is predominantly lecture-based as affirmed by 240(100%) rural teachers and 184(77%) urban counterparts.

Research Question 5: To what extent are rural and urban environments conducive for learning computer skills in their primary schools?

Table 5: Learning environment for Computer Literacy Classes

No. of Respondents & Responses (%) n = 480

s/no	*Items*	*Rural (240)*	*Urban (240)*
a.	Where does your class learn computer literacy?	Classroom =240(100%) Computer Laboratory=0(0%)	Classroom =208(87%) Computer Laboratory=32(13%)

b.	Does the learning environment have adequate and regular electricity?	Yes = 0(0%) No = 240(100%)	Yes = 0(0%) No = 240(100%)
c.	What is the population of the class?	1-15 =24(10%) 16-30 =216(90%) 31-50 =0(0%)	1-15 =208(87%) 16-30 =32(13%) 31-50 =0(0%)

(% round off to the nearest whole number)

On the issue of learning environment, table 5 revealed that every Computer Literacy class in rural schools takes place in the classroom 240(100%) and never in any designated equipped room called Computer Lab. This case is only slightly different in urban areas because 32(13%) use computer lab while the majority, 208(87%), do not. Concerning electricity, all respondents (240(100%) rural and 240(100% urban) affirmed to the fact that there is problem of irregular electricity power supply in both rural and urban schools. The table also showed that class population in rural primary schools is more in the range of 16-30 and less in the range of 1-15 as indicated by 216(90%) and 24(10%) rural respondents respectively. and is more than that of the urban ones (1-15 (26(87%) and 16-30 (4(13%). Nevertheless, none of the classes is up 30 pupils.

Research Question 6: To what extent do rural and urban pupils' characteristics affect their ability to learn computer technology?

Table 6: Characteristics of Computer literacy classes

No. of Respondents & Responses (%) n = 480

s/no	***Items***	***Rural (240)***	***Urban (240)***
a.	What is the average socio-economic status of the pupils?	Very rich= 0(0%) Rich= 39(16%) Poor= 88(37%) Very Poor=113(47%)	Very rich= 0(0%) Rich= 136(57%) Poor=72(30%) Very Poor=32(13%)
b.	What is their average reading ability?	Very good= 0(0%) Good= 16(7%) Fair=32(13%) Poor= 192(80%)	Very good= 40(17%) Good=72(30%) Fair=96(40%) Poor= 32(13%)
c.	How often do they go to places where people use computers to work?	Never= 48(20%) Rarely=120(50%) Seldom= 64(27%) Often= 8(3%) Always= 0(0%)	Never= 0(0%) Rarely= 0(0%) Seldom=24(10%) Often= 184(77%) Always= 32(13%)

(% round off to the nearest whole number)

From Table 6, it is derived that only 39(16%) rural pupils come from rich homes while majority of them 88(37%) and 113(47%) come from poor and very poor families respectively. This is in contrast from their urban schools where majority (136(57%) of pupils are from rich

families with others coming from poor 72(30%) and very poor 32(13%) homes. Furthermore, the respondents rated urban pupils as having better reading skills than their rural folks. As shown on the table, reading ability of urban children was rated as very good 40(17%), good 72(30%), fair 96(40%), while that of rural children was (very good 0(0%), good 16(7%), fair 32(13%), poor (24(80%) and very poor 192(80%). On the issue of exposure to places where people use computers to work, urban children were again seen to be better than their rural counterparts. From the table above, it is observed that 32(13%) always, 184(77%) often, and only 24(10%) of urban children see people working using computers. On the other hand, rural children were rated 0(0%) always, 8(3%) often, 64(27%) seldom, 120(50%) rarely, and 48(20%) never had opportunity of seeing people working with computers

SUMMARY OF THE FINDINGS

The findings were as follows:

a. that more urban schools and teachers possess computers, though the ratio of pupils per computer is generally high in both areas.
b. that both teachers and pupils in both locations experience low accessibility to computers, which are used mainly for office work rather than instructional purposes or individual use
c. that more teachers in urban areas are computer literate, a skill acquired through mostly self-effort though all acknowledged the importance of computer literacy skills to teacher effectiveness.
d. that Computer Technology/Science is a subject in both rural and urban primary schools, mostly taught by the class teachers with or without computer skills, and dominantly lecture-based.
e. though class population was not too high, learning environment was found inadequate due to limited computers, absence of computer labs, particularly, in rural schools, and general poor electricity power supply.
f. that poverty, low reading skill and limited exposure computers at work characterized mostly the rural children.

DISCUSSION

This study aimed at comparing computer literacy classes in rural and urban primary schools. The finding showed that there are more computers in urban schools than rural ones, an understandable situation since urban schools are closer to the seat of government and most of the pupils come from well-to-do homes. The same environmental influence may explain why more urban teachers possess their own personal computers than the rural ones do.

The rule in every skill acquisition programme is ‘practice’, which in turn makes perfect. Computer literacy is skill-oriented programme, hence the need for free access to computers for both the teachers and pupils. The lack of access to computers shown on Table 2 could explain the low computer literacy skills observed among teachers as earlier found by Ron (1998), Rahman (2002), Josiah et.al (2003), Kalu and Ekwueme (2003), and (Chukwu & Afolabi, 2003). Those computers in schools are mainly used for office work rather than teaching learning purposes, as earlier shown by Lawal, Ahmadu & Dogara (2003). This low

accessibility further hinders practice and transfer of learning in the use of computers.
Environmental influence on education could explain why more urban teachers are computer literate than their rural colleagues. That they acquired the skill mostly through self-directed learning, further buttresses the urban influence on the teachers. Nevertheless, majority on both sides affirmed to the importance of computer literacy skills in teacher effectiveness (Ogunkola, 2008). This finding is also in conformity with Ron (1998) who observed that teachers realize the tremendous potential computer technology can bring to teaching and learning, and Landu (2003) who indicated that teachers' awareness of the role of computer in instruction is not in doubt.

From Table 4, Computer Technology/Science is noted subject in both rural and urban primary schools. This is consistent with the stipulations of the National Policy on Education for the introduction of Computer Studies at the primary school level in Nigeria (Abimbade, 1999; Ezekoka, 2007). However, the engagement of teachers to teach the subject with or without necessarily considering their competency in the skills is disturbing and anomalous, given that a teacher cannot give what he/she does not have. There is also the finding that the teaching strategy is predominantly lecture-based in both rural and urban schools, though interspersed with practical demonstrations in the urban. According to Achuonye (2010), rather than lecture-based method, more active and innovative methods should be employed.
The importance of good stimulating environment to learning can never be over-emphasized (Clayton, Blumberg & Auld, 2010). That Computer literacy classes in rural schools are limited to classrooms while urban classes sometimes extend teaching sessions to computer labs, as seen in Table 5, confirmed the availability of greater facilities in the cities than we have in villages. Poor electricity in both urban and rural classrooms affirms the major setbacks created by the power industry to educational programmes in Nigeria. The higher population of pupils, particularly in the rural schools, agrees with the findings of Josiah et.al (2003). This further hinders computer literacy in rural areas given that fewer computers are found in the rural areas.
Appropriate learner characteristics play significant role in teaching-learning process as earlier stressed by Onwuagboke and Ukegbu (2010) in successful use of ICT; most rural primary school pupils, compared with their urban counterparts, are generally faced with poverty, poor reading ability and limited exposure to real computer applications. These points would eventually explain the possibility of more urban children becoming more computer literate than their rural counterparts.

CONCLUSION

The thrust of this paper has been to compare rural and urban computer literacy classes in primary schools. Computers are major key players in the field of ICT hence the need for everybody, that must benefit from its enormous potentials, to first acquire computer skills. The findings of this study are disturbing given the high population of Nigerian children, particularly in rural areas who are faced with all these challenges revealed by this study. Children are the future leaders; the bedrock of every nation; and no wise nation can afford to

leave them behind. The earlier, they are exposed to computers and its applications, the better. They need to acquire computer skills early to compete favourably with their counterparts in other parts of the world. This would also help them to cope with the challenges of secondary and tertiary education and future life of work. Though the policy on ICT has been enacted and launched since 1988 by the Federal Government of Nigeria, its realization has been mere mirage, and may continue to be so, if every child, whether rural or urban, is not carried along through effective computer literacy classes. The challenges revealed by this study must be leveled down to bring computer skills to the door step of every Nigerian child, irrespective of his/her area of residence.

RECOMMENDATIONS

Based on the above findings, the following recommendations are imperative:

1. Public-spirited individuals and organizations should assist the government in procuring computers for use in both urban and rural schools.
2. Government should ensure that the ICT policy is not just kept in drawer, but should be followed up with effective implementation, by:

- giving teachers and pupils free access to computers in their respective schools.
- organizing regular practical oriented, hands-on-computer in-service and pre-service programmes for all teachers.
- restructuring policies on Teacher Education, recruitment and promotion, particularly at primary school level, to emphasize practical demonstrations of computer skills.
- motivating teachers to adopt practical-oriented teaching strategies which would enhance acquisition of computer literacy skill by their class pupils.
- providing well-equipped computer labs with good generators to ensure regular power supply to all schools
- ensuring that school-pupils, particularly those in rural primary schools, embark on regular excursions to places where computers are used for work.

Acknowledgement

Much thanks to all who contributed to the success of this project: the authors of the cited literature, the teacher-workshop participants who served as respondents, the staff of Rivers State Ministry of Education for all their assistance in selection, distribution and retrieval of the instruments, my senior colleagues and the reviewers whose constructive criticisms strengthened this work..

References

Abimbade, A. (1996). Computer-assisted instruction (CAI) and the teachers. In: Abimbade A, (ed.) *Nigeria*

Journal of Computer Literacy, Niyi Printers, *Ibadan,* 1(1), pp. 74-81.

Abimbade, A. (1999). *Principles and Practice of Educational Technology*. International Pub. Ltd. London.

Achuonye K. A. (2010). A Comparative Study of Problem-Based and Lecture-Based

Learning in

Secondary School Students' Motivation to Learn Science. *International Journal of Science and*

Technology Education Research, 1(6), Pp 126-131. Http://Www.Academicjournals.Org/Ijster

Ajuzie N. E. & Alugbuo D. O. (2012). Availability and Usability of ICTs in Teaching and Learning English

Language in Secondary Schools in Okigwe Educational Zone, Imo State. Journal of Educational

Media and Technology, pp. 23-29.

Aloba L. (2012). There are little usage of computers in Nigeria. Retrieved from:

http://compterliteracyacademy.blogspot.com/

Anaekwe, M. C. (2003). Identification of some information communications technology (ICT) enhancing

skills of pupils needed for sustainable science, technology and mathematics (STM) education.

Proceedings of the 44th annual conference of STAN, 18-21.

Anao R. I. (2003). Using Computer in Enhancing the Accuracy of the Trapezoidal Rule. Nigerian Journal

of Computer Literacy 3(1) 67-71.

Babalola N. Ibitoye D. & Efunbajo C. (2002). The impact of Teachers Access to ICT on Student

Achievement. Journal of Computer Assisted Learning 9(3) 63-71.

Chukwu, A.C. & Afolabi, M.A. (2003). Computer literacy amongst the science, technology and

mathematics teachers in the Colleges of Education in Plateau state. *Proceedings of the44th annual*

conference of STAN, pp 22-24.

Clayton K., Blumberg E. and Auld D.P. (2010). The relationship between motivation, learning

strategies and choice of environment whether traditional or including an online component. *British*

Journal of Educational Technology, 41(3), 349-364.

Esan, F. (1996). Computer literacy for National development. in: Abimbade A, (ed.), Nigeria Journal of

Computer Literacy, Ibadan: Niyi Printers 1(1), pp 10-14.

Ezekoka G. K. (2007). Evaluation of Secondary School Teachers Use of ICT for Curriculum

Implementation. Journal of Women in Academics 4(1) 210-219.

Ezekute, O. G. (2000). The use of calculators and computers in Nigerian schools in the 3rd Millennium

ABCUS. *The Journal of the Mathematics Association of Nigeria*, 24(1), 40-50

Federal Republic of Nigeria (2004). National Policy on Education, Lagos, NERDC.

Friedrich H. (2005). Secondary School Attendance in Nigeria. *International Education*

Statistics

Isoun T. T. (2003). Keynote Address. Proceedings of the 44th annual conference of STAN, 3-5

Josiah M. M. Pam H. D. & Okooboh, M. A. (2003). The status of computer education and science learning

in Plateau state secondary schools: a case study of Plateau state central senatorial district.

Proceedings of the 44th annual conference of STAN, 25-28.

Kalu I & Ekwueme C.O. (2003). Assessment of teaches' level of literacy attitude towards ICT application

in STM. *Proceedings of the 44th annual conference of STAN*, pp. 14-17.

Kosakowski J. (1998). The Benefits Of Information Technology In Education. Retrieved from http://www.askeric.org/uhoime/digest

Landu I.T. (2003). Information and Communication Technology (ICT): Science teachers' awareness.

Proceedings of the 44th annual conference of STAN, 41-44.

Lawal F.K., Ahmadu, H.O. & Dogara, M.M. (2003). The status of Information and Communication

Technology (ICT) in teaching science technology and Mathematics (STM) in selected secondary

schools in Kano Metropolis. *Proceedings of the 44th annual conference of STAN*, 37-40.

Ogunkola B. J. (2008). Computer Attitude, Ownership and Use as Predictors of Computer Literacy of

Science Teachers in Nigeria. International Journal of Environmental & Science Education, 53 – 57.

Retrieved from http://www.nairaland.com/2747/comp

Onwuabgoke, B.B.C. & Ukegbu M.N. (2010). Integrating ICT in the Teaching and Learning Process:

Teachers' Experience at Secondary School Level. Journal of Educational Media and Technology,

14(2), 17-23.

Psychology Wiki. Computer Literacy. Retrieved from http://psychology.wikia.com/wiki/psychology_wiki

Rahman I. (2002). Strengthening information and technology in Bangladesh. in: Akale M.A. G.

Proceeding of the 43rd STAN Conference and Inaugural of CASTME Africa, H.E.B(Nig.) Ltd. Ibadan.

Ron K. (1998). Factors Affecting the Adoption and Use of Computer Technology in Schools. Retrieved

from http://www.usask.ca/education/coursework/803papers/krysa/krysa

Torunarigha Y. D. (2011). Enhancing the Nigerian Teacher Effectiveness in the 21st Century. in: Abolade

A.O., Ogodo C.M. & Maduewsi B.U. (Eds.). Contemporary Issues in Nigerian

Education, West and
Solomon Publishing Co. Ltd, Onitsha, pp 587-602.
UNESCO (1998). Teachers, Teaching and New Technologies. World Education Report, Paris: UNESCO,
78-94.
UNICEF Nigeria, (2005).
Uwaje, C. (2000). Computers, both hardware and software. In: Ajayi G.O. (ed.), *Proceedings of workshop*
on national information and communication infrastructure, policy, plans, and strategies. Abuja,
Nigeria**.**
World Bank (2002). Information and Communication Technologies. A World Group Strategy, The World
Bank Group, Washington D.C.
Yoloye E. O. & Adekaonshie A. A. (2005). Integrating of ICTs in Universities' Curricula. Journal of e-
learning 1(1), 67-85.
Yusufu M. O. (2005). Information and Communication Technologies and Education. Journal of Nigerian
National Policy for ICT, 6(3) 36-44.