

ICT Utilization in Secondary Schools in Ede South Local Government, Osun State, Nigeria

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Abstract— This paper investigated the use of information communication and technology (ICT) for effective management of secondary schools in Ede South Local Government. The study investigated the level of availability of ICT facilities in schools, the capacity for using ICT facilities for teaching-learning process, the perceived benefits of using ICT and the problems facing the use of ICT in secondary schools. It was found that the level of provision of ICT equipment to secondary schools in the State was low. The intermittent disruption of electricity and inadequate funding were found as major problem inhibiting the usage of ICT equipment for the management of schools in the State. It was concluded that the State Government was not fully ready to imbibe (ICT) for the effective management of secondary schools in the State. It was recommended that the State government should supply the necessary ICT equipment to all secondary schools in the State. Government should also improve the training of principals, teachers and computer personnel in the use of computers and other ICT equipment through seminars, workshops and in-services training.

Keywords— Information and Communication Technologies (ICTs); secondary school; application; utilization.

I. INTRODUCTION

Information and communication technologies (ICT) have become key tools and had a revolution impact on how we see the world and how we live. Today, the place of ICTs in education and the world in general cannot be undermined. Modern day businesses are conducted and facilitated through the use of telephones, fax machines and computer communication networks through the internet. This phenomenon has given birth to the contemporary e-commerce, e-government, e-medicine, e-banking and e-education among others. [1], [2].

Defined ICT as the handling and processing of information (texts, images, graphs, instruction, etc) for use, by means of electronic and communication devices such as computers, cameras, telephone. [3] and [4] also refer to ICT as electronic or computerized devices, assisted by human and interactive materials that can be used for a wide range of

teaching and learning as well as for personal use. From these definitions ICT could therefore be defined as processing and sharing of information using all kinds of electronic device.

The increasing information and communication in Nigeria was the development of educational system at all levels brings Nigerian National Policy on the adoption of ICT in greater demands on educational practitioners such as schools. In enhancing this policy, the laid emphasis on curriculum planners, evaluators and teachers in their bid the role and utilisation of information and communication to move along with the information technology of this 21st century. It emphasized that the prominent role of information and communication technology could be seen as the world changes, information and knowledge in advancing knowledge and skills necessary for effective change rapidly. There is therefore the well as the management of schools also have to change need to integrate (ICT) into education in Nigeria for the use of information communication and technology effective teaching and learning processes in schools. In (ICT) can improve education quality expand learning enhancing sustainable development in Nigeria Internet opportunities and make education accessible.

1.1 ICTs in Nigerian Schools.

The field of education has been affected by ICTs, which have undoubtedly affected teaching, learning, and research [5]. A great deal of research has proven the benefits to the quality of education [6]. ICTs have the potential to accelerate, enrich, and deepen skills, to motivate and engage students, to help relate school experience to work practices, create economic viability for tomorrow's workers, as well as strengthening teaching and helping schools change [7], [4]. In a rapidly changing world, basic education is essential for an individual be able to access and apply information. Such ability must find include ICTs in the global village. The Economic Commission for Africa has indicated that the ability to access and use information is no longer a luxury, but a necessity for development. Unfortunately, many

developing countries, especially in Africa, are still low in ICT application and use [8].

1.2 *The Need for ICT Application in Nigerian Secondary Schools*

Improved secondary education is essential to the creation of effective human capital in any country. The need for ICT in Nigerian secondary schools cannot be overemphasized. In this technology-driven age, everyone requires ICT competence to survive. Organisations are finding it very necessary to train and re-train their employees to establish or increase their knowledge of computers and other ICT facilities [9],[10]. This calls for early acquisition of ICT skills by students. The ability to use computers effectively has become an essential part of everyone's education. Skills such as bookkeeping, clerical and administrative work, stocktaking, and so forth, now constitute a set of computerized practices that form the core IT skills package: spreadsheets, word processors, and databases [11]. New instructional techniques that use ICTs provide a different modality of instruments. For the student, ICT use allows for increased individualisation of learning. In schools where new technologies are used, students have access to tools that adjust to their attention span and provide valuable and immediate feedback for literacy enhancement, which is currently not fully implemented in the Nigerian school system [12]. ICT application and use will prove beneficial in improving Nigeria's educational system and giving students a better education. A technologically-advanced workforce will lead to ICT growth in Nigeria, with the potential to improve military technology and telecommunications, media communications, and skilled ICT professionals who will be well-equipped to solve IT problems in Nigeria and other parts of the world [13].

1.3 *ICT Application in Nigerian Secondary Schools.*

There are developments in the Nigerian education sector which indicate some level of ICT application in the secondary schools. The Federal Government of Nigeria, in the *National Policy on Education* [14], recognizes the prominent role of ICTs in the modern world, and has integrated ICTs into education in Nigeria. To actualize this goal, the document states that government will provide basic infrastructure and training at the primary school. At the junior secondary school, computer education has been made a pre-vocational elective, and is a vocational elective at the senior secondary school. It is also the intention of government to provide necessary infrastructure and training for the integration of ICTs in the secondary school system. It should be noted that 2004 was not the first attempt the

Nigerian government made to introduce computer education in schools. In 1988, the Nigerian government enacted a policy on computer education. The plan was to establish pilot schools and diffuse computer education innovation first to all secondary schools, and then to primary schools. Unfortunately, the project did not really take off beyond the distribution and installation of personal computers [15] cited by [8]. concludes that the computer is not part of classroom technology in more than 90 percent of Nigerian public schools. This implies that the chalkboard and textbook continue to dominate classroom activities in most Nigerian secondary schools. The Federal Ministry of Education has launched an ICT-driven project,(Federal Republic of Nigeria, [16], [8], [15], which was intended to equip all schools in Nigeria with computers and communications technologies. In June 2003, at the African Summit of the World Economic Forum held in Durban, South Africa, the New Partnership for African Development (NEPAD) launched the e-Schools Initiative, intended to equip all African high schools with ICT equipment including computers, radio and television sets, phones and fax machines, communication equipment, scanners, digital cameras, and copiers, among other things. It is also meant to connect African students to the Internet. The NEPAD capacity-building initiative will be executed over a ten-year period, with the high school component being completed in the first five years. Three phases are envisaged, with fifteen to twenty countries in each phase. The phases are to be staggered, and an estimated 600,100 schools are expected to benefit. The aim of the initiative is to impart ICT skills to young Africans in primary and secondary schools, and to harness ICT to improve, enrich, and expand education in African countries [17].

The Nigerian Federal Government has commissioned a mobile Internet unit (MIU) operated by the Nigerian National Information Technology Development Agency (NITDA). The MIU is a locally-made but that has been converted into a mobile training and cyber centre. Its interior has ten workstations, all networked and connected to the Internet. The MIU is also equipped with printers, photocopiers, and a number of multimedia facilities. Internet is provided via VSAT with a 1.2m dish mounted on the roof of the bus. It is also equipped with a small electric generator to ensure regular power supply. The MIU takes the Internet to places areas and various primary and high schools [18]. The number of buses is so small; however, that most rural areas and schools have not yet been covered. Although efforts have been made to ensure that ICTs are available and used in Nigerian secondary schools, the level of uptake is still low. It has been observed by [13] that most

schools, both private and government, do not offer ICT training programmes. NEPAD has scored the level of African continent students' experience with ICTs and their proficiency in using them very low. Fifty-five percent of students within the continent, including Nigeria, Algeria, Burkina Faso, Cameroon, Republic of Congo, Egypt, Gabon, Lesotho, Mali, Mauritius, Mozambique, Rwanda, Senegal, South Africa, and Uganda (who are participating in the first phase of the NEPAD e-Schools initiative), stated they had no experience at all in using computers. Other findings included that the typical African school environment provides neither opportunity nor training in using ICTS, and that 75 percent of responding teachers have no or very limited experience and expertise regarding ICT educational applications [19].

[20]discovered that the unavailability of some ICT components in schools hampers teachers' use of ICTs. Lack of adequate searching skills and of access points in the schools were reported as factors inhibiting the use of the Internet by secondary school teachers [21]. The absence of ICT equipment in most Nigerian secondary schools leads students to resort to cybercafés for Internet access. Most cybercafé clients in Nigeria are students [22].

A number of studies describe the ICTs environment in secondary schools in Nigeria. Many of these studies investigate the utilisation of ICTs from the educator view point. No studies could be found providing insights into the utilisation of ICTs from the learner's perspective. As Learners are the leaders and workforce of tomorrow, it is important to establish whether are technologically equipped enough to cope with the demand that society we made of them [23]

The purpose of this study is to examine the level of availability and the capacity of using the ICT facilities in secondary schools. The paper also investigated the perceived benefits of using ICT for teaching and the perceived problems of using ICT in secondary schools in Ede South local government.

II. METHODOLOGY

The target audience for this study is students. A survey research was used as the study method. Self-administered questionnaire was the data-gathering instrument used. The choice of the instrument was consequent on the fact that accessing student on personal basis would have been time-consuming and in practical, because, the study had to be conducted during the school hours, possibly during the break-time which was too short for any significant progress. The questionnaire was made the three sections. Section one, aimed to gather personal information from the respondents, section 2 focus on the utilization, accessibility and availability of ICTs within the school environment, while section 3 also focused on determination of the student existing skills and utilization of ICTs as well as what problem tampered the utilization of ICTs in schools.

All the twenty-nine secondary schools in Ede South local government were targeted, and after making prior appointment with the head master, the objective of the study were explained to them and permission was granted. A teacher contact was used for the distribution collection of the questionnaire. Non-probably sampling was used targeting of each school student population. Although the ratio was fairly adequate, the method was used to select the participating learners because as representative of a specific gender or class level was not required A total of 341 questionnaire were distributed to the learners, and 281 (82%) were returned. This comprises, seventeen middle schools, (five = private, twelve = public) and twelve senior high schools (five = private, seven = public). All the schools are co-educational. Table1 indicates the list of the schools, abbreviation of the schools names and the status of the schools. Statistical package for social science (SPSS) software was used for the data analysis. The analysis was done on the basis of learners schools. This was done with the intent of comparing learners from schools in the more rural location with those at the local government headquarters.

Table.1: Secondary Schools in Ede South Local Government.

NAME OF SCHOOLS	ABBREVIATION	STATUS	TYPE
ADVENTIST MIDDLE SCHOOL, EDE.	AGS	MIDDLE	PUBLIC
ADVENTIST HIGH SCHOOL, I, EDE.	AGS, JI	SENIOR	PUBLIC
ADVENTIST HIGH SCHOOL, II, EDE.	AGS, J2	SENIOR	PUBLIC
AGBORAN SCHOOL OF SCIENCE, EDE	AGSS	SENIOR	PUBLIC
AKODA MODEL HIGH SCHOOL, AKODA	AMS	MID/HIGH	PUBLIC
AL-FAREED COLEDGE, EDE	AFC	SENIOR	PRIVATE
AL-FAREED COLEDGE, I, EDE	AFC, JI	MIDDLE	PRIVATE
ANSAR-UR-ISLAM HIGH SCHOOL, EDE	AUGS	SENIOR	PUBLIC
ANSAR-UR-ISLAM MIDDLE SCHOOL, I, EDE	AUGS,J1	MIDDLE	PUBLIC

NAME OF SCHOOLS	ABBREVIATION	STATUS	TYPE
ANSAR-UR-ISLAM MIDDLE SCHOOL, II, EDE	AUGS, J2	MIDDLE	PUBLIC
BAPTIST HIGH SCHOOL, S EDE.	BHS	SENIOR	PUBLIC
BAPTIST MIDDLE SCHOOL, I, EDE.	BHS, J1	MIDDLE	PUBLIC
BAPTIST MIDDLE SCHOOL, II, EDE.	BHS, J2	MIDDLE	PUBLIC
CENTRE POINT COLLEDGE, EDE	CPC	SENIOR	PRIVATE
CENTRE POINT COLLEDGE,I, EDE	CPC, J1	MIDDLE	PRIVATE
COMMUNITY HIGH SCHOOL, ALAJUE	CHS	SENIOR	PUBLIC
COMMUNITY MIDDLE SCHOOL,I, ALAJUE	CHS, J1	MIDDLE	PUBLIC
ILORI INTERNATIONAL HIGH SCHOOL, OGBERIN, EDE	IIHS	SENIOR	PRIVATE
ILORI INTERNATIONAL HIGH SCHOOL, OGBERIN,I, EDE	IIHS, J1	MIDDLE	PRIVATE
ISLAMIC COMPREHENSIVE COLLEGE, EDE	ICC	SENIOR	PRIVATE
ISLAMIC COMPREHENSIVE COLLEGE, I, EDE	ICC, J1	MIDDLE	PRIVATE
LAMINISA MIDDLE SCHOOL EGBEDA-LOOGUN	LGS	MIDDLE	PUBLIC
OBA LAOYE MIDDLE SCHOOL I, EDE	OLGS	MIDDLE	PUBLIC
OBA LAOYE MIDDLE SCHOOL, II, EDE	OLGS,J1	MIDDLE	PUBLIC
OBA LAOYE MIDDLE SCHOOL,III, EDE	OLGS,J2	MIDDLE	PUBLIC
OMOWUMI COMPREHENSIVE COLLEGE, EDE	OCC	SENIOR	PRIVATE
OMOWUMI COMPREHENSIVE COLLEGE, I, EDE	OCC, J1	MIDDLE	PRIVATE
SEKONA HIGH SCHOOL, SEKONA	SGS	SENIOR	PUBLIC
SEKONA MIDDLE SCHOOL,I, SEKONA	SGS, J2	MIDDLE	PUBLIC

Table.2: illustrates the school's student population, as well as how many questionnaires were handed out and received from each school.

NAME OF SCHOOLS	School size	Given	Received
ADVENTIST MIDDLE SCHOOL, EDE.	516	16	16
ADVENTIST HIGH SCHOOL, I, EDE.	637	19	10
ADVENTIST HIGH SCHOOL, II, EDE.	631	19	15
AGBORAN SCHOOL OF SCIENCE, EDE	825	25	20
AKODA MODEL HIGH SCHOOL, AKODA	78	2	2
AL-FAREED COLEDGE, EDE	70	2	2
AL-FAREED COLEDGE, I, EDE	200	6	4
ANSAR-UR-ISLAM HIGH SCHOOL, EDE	829	25	21
ANSAR-UR-ISLAM MIDDLE SCHOOL, I, EDE	388	12	9
ANSAR-UR-ISLAM MIDDLE SCHOOL, II, EDE	472	14	11
BAPTIST HIGH SCHOOL, S EDE.	687	21	18
BAPTIST MIDDLE SCHOOL, I, EDE.	450	14	12
BAPTIST MIDDLE SCHOOL, II, EDE.	282	9	9
CENTRE POINT COLLEDGE, EDE	171	5	9
CENTRE POINT COLLEDGE,I, EDE	197	6	5
COMMUNITY HIGH SCHOOL, ALAJUE	425	13	12
COMMUNITY MIDDLE SCHOOL,I, ALAJUE	512	15	11
ILORI INTERNATIONAL HIGH SCHOOL, OGBERIN, EDE	277	8	6
ILORI INTERNATIONAL HIGH SCHOOL, OGBERIN,I, EDE	328	10	8
ISLAMIC COMPREHENSIVE COLLEGE, EDE	199	6	5

NAME OF SCHOOLS	School size	Given	Received
ISLAMIC COMPREHENSIVE COLLEGE, I, EDE	189	6	6
LAMINISA MIDDLE SCHOOL EGBEDA-LOOGUN	83	3	3
OBA LAOYE MIDDLE SCHOOL I, EDE	710	21	17
OBA LAOYE MIDDLE SCHOOL, II, EDE	400	12	11
OBA LAOYE MIDDLE SCHOOL,III, EDE	681	20	16
OMOWUMI COMPREHENSIVE COLLEGE, EDE	112	3	2
OMOWUMI COMPREHENSIVE COLLEGE, I, EDE	70	2	2
SEKONA HIGH SCHOOL, SEKONA	366	11	6
SEKONA MIDDLE SCHOOL,I, SEKONA	517	16	12

III. RESULTS AND DISCUSSIONS

The results are reported in sections 5.1 to 5.10 and in Tables 3 to 12.

3.1 Availability of ICTs in the schools

The schools in Ede south local government seem to be relatively endowed with ICTs. Even schools in the more rural areas have a variety of ICTs available for utilisation. Notably Laminisa Grammar School, Egbeda-loogun, which

is a public school catering for mainly previously disadvantaged learners, does not have access to computers, while all the other schools, both public and private, have these facilities. The fact that these facilities are available at the schools is an indication that electricity is also available. This combined with the availability of telephones and radios at all the schools. Table 4 shows the details of ICTs facilities in all the schools.

Table.3: Availability of ICT tools and services

Schools	Computers	Internet	Email	DVD/ CD- ROM	Tele phone	Fax	Mobile phone	Television	Radio	Video	Electronic Record
AGS	X	-	-	X	X	-	X	X	X	-	-
AGS,J1	X	-	-	X	X	-	X	X	X	-	-
AGS,J2	X	-	-	X	X	-	X	X	X	-	-
AGSS	X	-	-	X	X	-	X	-	X	-	-
AMS	X	-	-	X	X	-	X	-	X	-	-
AFC	X	-	-	X	X	-	X	-	X	-	-
AFC,J1	X	-	-	X	X	-	X	-	X	-	-
AUGS,J1	X	-	-	X	X	-	X	-	X	-	-
AUGS,J2	X	-	-	X	X	-	X	-	X	-	-
BHS	X	-	-	X	X	-	X	-	X	-	-
BHS,J1	X	-	-	X	X	-	X	-	X	-	-
BHS,J2	X	-	-	X	X	-	X	-	X	-	-
CPC	X	-	-	X	X	-	X	-	X	-	-
CPC,J1	X	-	-	X	X	-	X	-	X	-	-
CHS	X	-	-	X	X	-	X	-	X	-	-
CHS,J1	X	-	-	X	X	-	X	-	X	-	-
IIHS	X	-	-	X	X	-	X	-	X	-	-
IIHS,J1	X	-	-	X	X	-	X	-	X	-	-
ICC	X	-	-	X	X	-	X	-	X	-	-
ICC,J1	X	-	-	X	X	-	X	-	X	-	-
LGS	-	-	-	-	X	-	X	-	X	-	-
OLGS	X	X	-	X	X	-	X	-	X	-	-
OLGS,J1	X	X	-	X	X	-	X	-	X	-	-
OLGS,J2	X	X	-	X	X	-	X	-	X	-	-

Schools	Computers	Internet	Email	DVD/CD-ROM	Telephone	Fax	Mobile phone	Television	Radio	Video	Electronic Record
OCC	X	-	-	X	X	-	X	-	X		-
OCC,J1	X	-	-	X	X	-	X	-	X	-	-
SGS	X	-	-	X	X	-	X	-	X	-	-
SGS,J1	X	-	-	X	X	-	X	-	X	-	-

Table.4: Purpose for using ICT tools and services

Schools	Communication with DOE	Communication with others in school	Communication with friends and relatives	Collaboration with colleagues globally	Dissemination of information	Learning purpose	For assignment
AGS	0	1	12	0	0	1	1
AGS,J1	0	0	8	10	0	1	1
AGS,J2	0	0	4	0	1	2	2
AGSS	0	1	10	0	2	0	0
AMS	0	1	0	0	0	0	0
AFC	0	2	0	0	0	0	0
AFC,J1	0	0	2	0	0	0	0
AUGS	0	3	8	0	0	0	0
AUGS,J1	0	1	2	0	0	0	0
AUGS,J2	0	2	4	0	1	0	0
BHS	0	2	5	0	0	1	0
BHS,J1	0	1	6	0	0	0	0
BHS,J2	0	1	5	0	0	1	0
CPC	0	0	4	0	0	0	0
CPC,J1	0	0	2	0	0	0	0
CHS	0	0	6	0	0	1	1
CHS,J1	0	0	5	0	0	0	0
IIHS	0	1	2	1	0	1	0
IIHS,J1	0	1	3	0	1	0	0
ICC	0	2	1	0	0	0	0
ICC,J1	0	2	4	0	0	0	0
LGS	0	0	2	0	0	0	0
OLGS	0	2	8	2	0	0	0
OLGS,J1	0	2	7	0	2	0	0
OLGS,J2	0	3	5	0	0	1	0
OCC	0	0	1	0	0	0	0
OCC,J1	0	1	1	0	0	0	0
SGS	0	3	2	0	0	0	0
SG,J1S	0	2	6	0	0	0	0
Total	0	33	125	4	7	9	5

3.2 Reason for using ICT tools and services

Table 5 stated the purpose of using ICTs tools and services in the schools. It was expected that ICTs which can potentially enhanced and enrich the school curriculum would be utilized by those who have access to them.

Interestingly, ICTs are mainly used for communication, and not to seek or retrieve information. The same trend was found amongst the teachers[24]. At all schools for example, 100% of the respondent indicated that they don't used ICTs to communicate with the Department of Education. The

reasons for this communication would be explore, as learners should not normally find such communication necessary. What is disturbing is the virtual exclusive of ICTs for obtaining information for school assignments, as only (5) of the respondents from all schools indicated that they use ICTs for this purpose. As libraries are non-existent at most schools, it is worth exploring whether assignments are part of the school assessment program, or alternatively, which sources learners use to obtain information for assignments. It is observed that (125) learners use ICTs to communicate with friends and relatives through telephone or mobile phone. The fact that (9) learners indicated that they use ICTs for learning purposes, leads to the assumption that learning is mostly done from class notes and textbooks.

3.3 Acquisition of skills to operate computers

To operate computers, training is needed. At this point we wanted to determine how learners acquired the skills necessary to operate the computer. Most learners (152) appear to be self-taught, which corresponds with the notion that modern young people have the ability to navigate technology on their own, albeit through trial and error. Very few students seem to have learnt their skills from school, which could possibly mean that skills are only taught to those taking computer studies as school subject. None of the student indicated that they received training abroad. The sizeable number (28) who did not respond to this question, are indication of the shortage of skills amongst the learners. Visibly if the government is indeed serious about all school children being ICT literate by 2013, much work needs to be done. The table below shows how learners obtain skills to use the computer system.

Table.5: How learners obtain skills to use computers.

Schools	Self-study	From fellow learners	In house	Training abroad	At school	No response
AGS	12	3	-	0	-	1
AGS,J1	8	0	0	0	0	2
AGS,J2	10	3	1	0	1	0
AGSS	12	8	0	0	0	0
AMS	2	0	0	0	0	0
AFC	0	2	0	0	0	0
AFC,J1	2	2	0	0	0	0
AUGS	10	5	0	0	6	0
AUGS,J1	4	3	0	0	1	1
AUGS,J2	7	4	0	0	0	0
BHS	12	0	0	0	0	6
BHS,J1	8	2	2	0	0	0
BHS,J2	5	2	1	0	0	0
CPC	3	3	1	0	0	2
CPC,J1	5	0	0	0	0	0
CHS	6	6	0	0	0	0
CHS,J1	5	2	0	0	0	4
IIHS	2	4	0	0	0	0
IIHS,J1	5	2	0	0	0	1
ICC	2	1	0	0	0	2
ICC,J1	3	2	0	0	0	1
LGS	3	0	0	0	0	0
OLGS	5	10	0	0	0	2
OLGS,J1	2	7	1	0	1	0
OLGS,J2	8	4	0	0	0	4
OCC	0	2	0	0	0	0
OCC,J1	0	2	0	0	0	0
SGS	3	3	0	0	0	0
SGS,J1	8	2	0	0	0	2
Total	152	84	6	0	10	28

Table.6: Time spent using ICT per week.

Schools	1-5 hours	6-10 hours	11-15 hours	More than 16 hours	No response	None
AGS	2	8	4	2	0	0
AGS,J1	5	3	1	0	0	1
AGS,J2	6	5	2	1	1	0
AGSS	0	20	0	0	0	0
AMS	1	1	0	0	0	0
AFC	0	2	0	0	0	0
AFC,J1	4	0	0	0	0	0
AUGS	2	6	1	12	0	0
AUGS,J1	2	7	0	0	0	0
AUGS,J2	6	3	0	0	0	2
BHS	10	2	0	6	0	0
BHS,J1	9	0	3	0	0	0
BHS,J2	0	6	2	1	0	0
CPC	1	5	1	1	0	1
CPC,J1	2	1	2	0	0	0
CHS	3	6	1	0	1	1
CHS,J1	2	7	0	0	1	1
IIHS	1	0	5	0	0	0
IIHS,J1	0	0	5	0	3	0
ICC	2	0	0	0	2	1
ICC,J1	1	5	0	0	0	0
LGS	1	2	0	0	0	0
OLGS	3	8	3	0	3	0
OLGS,J1	4	6	0	1	0	0
OLGS,J2	5	6	1	0	2	2
OCC	2	0	0	0	0	0
OCC,J1	0	2	0	0	0	0
SGS	1	5	0	0	0	0
SGS,J1	4	6	0	0	2	0
Total	79	122	24	24	15	09

3.4 Time spent using ICTs

From the above table, most (122) of the respondents use the ICTs for maximum of (6-10) hours per week, while (24) of them spend considerably more time using the computers. As not many indicated that they used it for learning or specific academic purposes (such as writing assignments) it would be interesting to find out what activities are performed by those using ICTs, especially in a school like Oba Laoye Grammar School Ede which has an internet facilities. The above table shows the time spent by the respondents with ICTs.

3.5 Information seeking using ICTs

ICTs have had a profound influence on how individuals seek information. Moving away from having just relied on paper-based sources, ICTs provide instant access to information sources worldwide (Nthetha, 2006). Seeking information using these sources is, however, not always straightforward and easily attainable. The table below shows the learners abilities in terms of finding information using ICTs.

Table.7: Ability to find information using ICT

Schools	Always	Often	Sometimes	Never	No response
AGS	6	5	3	0	2
AGS,J1	2	5	3	0	0

Schools	Always	Often	Sometimes	Never	No response
AGS,J2	10	3	2	0	0
AGSS	10	8	2	0	0
AMS	0	1	1	0	0
AFC	0	0	1	0	1
AFC,J1	1	1	2	0	0
AUGS	8	7	0	0	6
AUGS,J1	2	2	4	1	0
AUGS,J2	1	0	8	0	1
BHS	3	2	9	2	2
BHS,J1	2	1	5	0	4
BHS,J2	1	2	4	1	1
CPC	1	0	8	0	0
CPC,J1	3	1	1	0	0
CHS	0	4	6	0	2
CHS,J1	4	1	4	1	1
IIHS	0	6	0	1	0
IIHS,J1	0	0	7	0	0
ICC	2	3	0	0	0
ICC,J1	1	2	3	0	0
LGS	2	1	0	0	0
OLGS	8	2	5	1	1
OLGS,J1	0	5	6	0	0
OLGS,J2	5	2	9	0	0
OCC	1	0	0	0	0
OCC,J1	0	0	0	1	2
SGS	1	5	0	0	0
SGS,J1	0	5	8	0	0
Total	74	74	101	08	23

It is encouraging to note that nearly half of the students stated that they are skilled enough to find the information they need. The high number of respondents who indicated

that they find information only sometimes (101) or never (8) suggest the need for skills-training to enhance information seeking.

Table.8: Rating computer skills

Schools	Excellence	Very good	Good	Enough to enable me to work	No response	None
AGS	2	5	8	0	1	0
AGS,J1	1	0	6	0	0	3
AGS,J2	1	2	4	4	4	0
AGSS	0	3	7	7	0	3
AMS	0	0	0	0	2	0
AFC	0	0	1	1	0	0
AFC,J1	0	0	1	2	1	0
AUGS	0	6	10	5	0	0
AUGS,J1	0	2	4	1	1	1
AUGS,J2	0	1	7	3	0	0
BHS	1	3	2	10	2	0
BHS,J1	0	5	0	7	0	0

Schools	Excellence	Very good	Good	Enough to enable me to work	No response	None
BHS,J2	0	2	4	0	3	0
CPC	0	4	2	3	0	0
CPC,J1	0	0	0	5	0	0
CHS	0	5	6	1	0	0
CHS,J1	0	2	7	0	2	0
IIHS	1	4	2	0	0	0
IIHS,J1	2	0	0	6	0	0
ICC	0	5	0	0	5	0
ICC,J1	0	2	4	1	0	0
LGS	0	3	0	0	0	3
OLGS	1	5	8	3	0	0
OLGS,J1	3	7	0	0	1	0
OLGS,J2	2	14	0	0	0	0
OCC	0	0	0	1	0	1
OCC,J1	0	0	0	0	2	0
SGS	0	5	1	0	0	0
SGS,J1	0	7	2	1	1	1
Total	14	82	86	61	25	12

3.6 Computer skills

From the above table, the computer is arguably the most efficient ICT tool for information storage, retrieval, and dissemination within the education environment. Since computers can be used to do assignments, store class extra notes for later retrieval, and retrieve information via the internet or e-mail, the ability to operate the computer should be a skill expected of all learners. This question aimed to determine the level of computer training/skills the learners had acquired. From the above, it appears that most students have enough skills to operate a computer with ease, while 15% rated themselves as fairly able. As computers form the backbone of today's information economy, it is imperative that those students who indicated that they do not have the necessary skills attain them before entering the workplace.

3.7 Utilisation of computers for information seeking and retrieval

The fact that an individual is computer literate does not necessarily mean that he /she can look for, and successfully retrieve information. Knowledge of data filing systems, useful keywords, and the construction of a search string, are all skills that determine the success or failure of information retrieval. Though it was mainly respondents from Oba Laoye Grammar School (both junior and senior schools) that indicated that they had information seeking and retrieval abilities using the internet, it was observed that the remaining school does not have access to this facility. Table 10 indicates how respondents from schools seek and retrieve information using the computer.

Table.9: Computers Searching Skills

Schools	Computers					Internet					E-mail				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
AGS	0	2	1	5	8	0	0	4	2	10	0	0	0	6	10
AGS,J1	0	2	0	5	3	0	0	1	1	8	0	1	1	3	6
AGS,J2	0	1	4	0	10	0	0	2	1	12	0	1	1	0	13
AGSS	0	0	2	4	14	0	1	1	2	16	0	0	0	0	20
AMS	0	0	0	0	2	0	0	0	0	2	0	0	0	0	2
AFC	0	0	0	1	1	0	0	0	1	1	0	0	1	1	0
AFC,J1	0	0	0	2	2	0	0	0	1	3	0	0	0	0	4
AUGS	0	0	7	0	14	0	0	0	0	21	0	0	0	3	18

Schools	Computers	Internet	E-mail
AUGS,J1	0 0 0 1 8	0 0 6 0 3	0 0 2 2 5
AUGS,J2	0 0 0 5 6	0 1 2 4 4	0 0 0 0 11
BHS	0 0 2 8 8	2 1 1 6 8	2 0 1 1 14
BHS,J1	1 2 4 1 4	0 0 2 0 10	1 0 9 0 2
BHS,J2	2 0 5 2 0	2 0 0 0 7	2 1 2 4 0
CPC	0 0 0 0 9	0 0 0 0 9	0 0 0 0 9
CPC,J1	0 0 1 2 3	0 2 0 0 3	0 0 0 5 0
CHS	0 4 2 6 0	0 0 2 10 0	0 0 0 0 12
CHS,J1	0 2 1 2 6	0 0 1 6 4	0 2 1 0 8
IIHS	2 1 2 1 0	2 1 1 2 0	2 0 0 0 4
IIHS,J1	3 2 3 0 0	3 0 3 2 0	3 0 3 2 0
ICC	0 0 0 0 5	0 0 0 0 5	0 0 0 0 5
ICC,J1	0 0 0 0 6	0 1 0 5 0	0 2 1 3 0
LGS	0 0 0 0 3	0 0 0 0 3	0 0 0 0 3
OLGS	2 4 1 8 2	2 2 8 4 1	2 4 2 1 8
OLGS,J1	4 2 0 0 5	8 0 1 3 3	4 1 3 0 3
OLGS,J2	4 0 0 2 10	4 3 2 4 3	4 0 2 4 6
OCC	0 0 0 0 2	0 0 0 2 0	0 0 0 0 2
OCC,J1	0 0 0 1 1	0 0 0 0 2	0 0 0 0 2
SGS	0 0 5 1 0	0 0 6 0 0	0 1 2 2 1
SGS,J1	0 3 3 3 3	0 0 8 1 3	0 0 0 3 9
Total	18 25 46 56 135	23 12 47 57 141	20 12 31 40 177

1 = Excellent 2 = Very good 3 = Good 4 = Enough to make me work 5 = none

3.8Internet utilisation: purpose and frequency

From an educational point of view, the internet can be used to find information contained on web pages, allows e-mail communication, discussion groups, and the downloading of

software. The respondents were required to indicate which of these activities they most frequently perform when using the internet. Their responses are shown in the table below.

Table.10: Frequency of using internet Services

Schools	Web page access					E-mail usage					Discussion group					Downloading software				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
AGS	0	1	0	5	10	0	2	2	4	8	1	2	4	7	2	0	0	3	1	12
AGS,J1	0	0	1	1	8	1	1	0	2	6	0	2	2	3	3	1	1	4	0	4
AGS,J2	0	0	0	0	15	0	0	3	0	12	0	1	6	0	8	2	0	1	6	6
AGSS	0	0	3	2	15	0	0	0	10	10	0	0	0	2	18	0	0	2	3	15
AMS	0	0	0	0	2	0	0	0	0	2	0	0	0	0	2	0	0	0	0	2
AFC	0	0	1	1	0	0	0	0	1	1	0	0	0	0	2	0	0	0	2	0
AFC,J1	0	0	2	2	0	0	0	0	0	4	0	0	1	2	1	0	0	0	2	2
AUGS	0	1	3	4	13	0	1	2	10	8	0	0	3	3	15	0	0	1	2	18
AUGS,J1	0	0	0	3	6	0	0	1	4	4	0	0	0	2	7	0	1	0	2	6
AUGS,J2	0	0	2	3	6	0	3	3	3	2	0	0	0	1	10	0	0	0	3	8
BHS	0	1	4	3	10	0	0	0	1	17	0	1	2	2	12	0	1	2	6	9
BHS,J1	0	0	0	0	12	0	0	0	4	8	0	0	3	3	6	0	0	1	0	11
BHS,J2	0	0	3	4	2	1	0	4	2	2	0	0	0	9	0	0	0	3	3	3
CPC	0	0	2	3	4	0	3	2	0	4	0	0	5	4	0	0	1	4	4	0
CPC,J1	0	1	1	0	3	0	1	2	1	1	0	0	0	0	5	0	0	1	4	0
CHS	0	0	2	3	7	1	3	2	3	3	0	0	0	8	4	0	0	0	4	8
CHS,J1	0	0	1	3	7	0	2	2	3	4	0	0	0	2	9	0	0	0	4	7

Schools	Web page access	E-mail usage	Discussion group	Downloading software
IIHS	0 0 1 1 4	0 0 2 2 2	0 1 0 0 5	0 0 1 2 3
IIHS,J1	0 0 2 2 4	0 0 2 0 6	0 0 0 2 6	0 0 3 0 5
ICC	0 0 1 1 3	0 1 2 1 1	0 0 0 2 3	0 0 0 1 4
ICC,J1	0 0 0 0 6	0 0 0 0 6	0 0 0 0 6	0 0 0 0 6
LGS	0 0 0 0 3	0 0 1 1 1	0 0 1 2 0	0 0 3 0 0
OLGS	0 0 0 8 9	0 0 2 7 8	0 0 3 6 8	0 0 0 5 12
OLGS,J1	0 0 0 0 11	0 0 0 0 11	0 0 1 2 8	0 0 3 2 6
OLGS,J2	0 2 2 4 8	0 0 4 0 12	0 0 5 4 7	0 0 5 8 3
OCC	0 0 0 1 1	0 0 0 2 0	0 0 0 0 2	0 0 0 0 2
OCC,J1	0 0 0 0 2	0 0 0 0 2	0 0 0 0 2	0 0 0 0 2
SGS	0 0 1 2 3	0 0 4 0 2	0 1 3 2 1	0 0 4 2 0
SGS,J1	0 2 3 1 6	0 1 7 2 2	0 3 4 3 2	0 1 2 1 8
Total	0 8 35 57 180	3 18 47 63 149	1 11 43 71 154	3 5 43 67 162

1 = Daily 2 = weekly 3 = Monthly 4 = sometimes 5 = never

Although the questionnaire stated clearly that answers should concern only the utilisation of ICTs within the school environment, it is clear that some learners also included home searching. However, Table 11 is still a positive indication that though not always available at school, technology is accessed and used at other venue(s). As expected, web pages (100; 25%) were cited as the most common reason for using the internet. Because the reason for visiting these pages were not stated by the respondents, it is assumed that the visits relate to school work and finding information that they needed to cope with everyday life (e.g. information on careers, health information, the daily news, or for accessing music files or games). Visits were mostly of an infrequent nature, possibly because of restricted access or lack of funds on part of the school.

The second most utilized service was communication. This correlates with the high number of respondents who indicated that they use ICTs for communication purposes, as shown in

Table 5. These findings correspond, with access to internet and communication abilities that it affords learners had a positive effect on the learning environment for both learners and teachers.

3.9 Communication patterns

Technology has changed the way in which humans communicate. To verify this, the respondents were asked whether ICTs have changed their patterns of communication. Most of the respondents (149) indicated that they had, and (131) responded negatively or did not respond to the question. Table 12 shows the results. The positive response could mean that the most of today's learners are engaging more and more with technology, which enable them to function and behave in a way that was unthinkable in the past. The relatively high negative response shows that many learners are still excluded from technologies that could enhance their learning and communication experience.

Table.11: ICTs changing communication

Schools	Yes	No	No response
AGS	9	6	1
AGS,J1	1	9	0
AGS,J2	8	7	0
AGSS	15	5	0
AMS	2	0	0
AFC	1	1	0
AFC,J1	2	1	1
AUGS	10	11	0
AUGS,J1	5	4	0
AUGS,J2	8	3	0
BHS	2	5	10

BHS,J1	9	3	0
BHS,J2	2	7	0
CPC	9	0	0
CPC,J1	0	5	0
CHS	7	3	2
CHS,J1	4	4	3
IIHS	2	3	1
IIHS,J1	5	3	0
ICC	3	2	0
ICC,J1	6	0	0
LGS	0	3	0
OLGS	10	6	1
OLGS,J1	8	3	0
OLGS,J2	4	12	0
OCC	0	2	0
OCC,J1	1	0	1
SGS	9	2	0
SGS,J1	2	10	0
Total	149	120	11

5.10 Limitations affecting ICT utilisation.

With the development of proper ICTs infrastructure still in its infancy, it can be assumed that there would be problems

hampering ICT utilisation. Respondents were asked what they perceived as problems or limitations, and Table 13 indicates their responses.

Table.12: Factors limiting ICT usage

Schools	No Electricity	No security	No Radio	No Video	Lack Training
AGS	X			X	X
AGS,J1	X			X	X
AGS,J2	X			X	X
AGSS	X	X		X	X
AMS	X			X	X
AFC	X		X	X	X
AFC,J1	X			X	X
AUGS	X			X	X
AUGS,J1	X			X	X
AUGS,J2	X			X	X
BHS	X	X		X	X
BHS,J1	X			X	X
BHS,J2	X		X	X	X
CPC	X			X	X
CPC,J1	X			X	X
CHS	X	X		X	X
CHS,J1	X	X		X	X
IIHS	X			X	X
IIHS,J1	X			X	X
ICC	X			X	X
ICC,J1	X			X	X
LGS	X	X		X	X

OLGS	X		X	X	X
OLGS,J1	X			X	X
OLGS,J2	X			X	X
OCC	X			X	X
OCC,J1	X			X	X
SGS	X	X		X	X
SGS,J1	X	X		X	X

From the above table, there are several limitations mentioned in the use of ICTs amongst the participating schools, the most notable problem being the lack of electricity. Interestingly, even schools that are known to have electricity available had respondents citing it as a problem. It is of course, possible that electricity was not working or not available in certain classrooms or to operate ICT that they would like to use, such as a computer. The lack of trained teachers, who could assist learners with the acquisition of ICT skills, was cited as another major problem. It was observed that inadequate trained teachers were perceived as a more serious problem amongst the staff themselves.

IV. CONCLUSIONS

The finding of this study has shown that Nigeria secondary schools are lagging behind in the level of application of ICT in the teaching-learning process. The ICT facilities are lacking in schools, the capacity for using ICT by both teachers and students is also very low. Despite the perceived benefits in the use of ICT in school, there are a lot of factors inhibiting the successful application of ICT in secondary schools. In order to fit into the new scientific order, it is necessary for Nigerian institutions and individuals alike to develop a society and culture that places a high value on information and communication technology.

The following recommendations are therefore made: The government should increase funding for the entire educational sector with emphasis on ICT; this will help improve the level of ICT facilities in the schools, There should also be continuous and periodic training of teachers on computer and ICT skills acquisition; This will help provide them with practical and functional knowledge of the computer, the internet and associated areas of ICT with the hope of integrating it with instructional methods of teaching and learning.

Also, government will have to be actively involved in various aspect concerning the introduction and exposure of ICTs to all learners. Not only should they provide clear policy guidelines as to what ICTs the learners should be introduced to, but also how schools will be equipped with the ICTs especially schools that lack the most basic

infrastructure, such as electricity, strong rooms, and qualified teachers. Government cannot expect the school community to supply the entire costly infrastructure, and therefore assistance should come in form of subsidies, extra budgets especially for ICTs, and budgeting for the training of the teaching staff.

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