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Evaluation of Information Communication Technology Literacy Skills (ICTs) Among Secondary School Students in Delta State, Nigeria

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ABSTRACT

This study explored the availability of ICT facilities and ICT literacy skills level of senior secondary school students in Delta State. The population of the study comprised 308 senior secondary school students purposively selected from two public schools and two private schools from two senatorial districts of the state. The study employed the descriptive survey design using a questionnaire designed to elicit a response from the students on the available ICT facilities' satisfaction with ICT facilities, level of ICT skills, and constraints to acquiring of ICT skills. The different statements were in the rating of, 2, 3 and 4. Data was collected from 308 students. The data collected were analyzed using simple percentages and mean statistical tools. Findings from the data collected identified low ICT facilities in the schools. The study reveals low ICT skills among the students that can deter the students from performing credibly in the Unified Tertiary Matriculation Examination (UTME). The study also reveals that they are not satisfied with the available facilities. The low level of ICT skills was attributed to lack of qualified teachers in ICT, and inadequate time allotted to it in the school timetable. Recommendations were made to improve on the facilities and needed perquisites that will improve the ICT skills of the students.

KEYWORDS: *Information communication technology Skills, Secondary school Students, Delta state, Nigeria.*

INTRODUCTION

Information Communication Technology is a vast field that includes all modern communication tools that are casually operational to a person's day-to-day activities. These tools have an immense network of internet browsers, cable, and wireless operators using infrastructures of transmission towers and data storage devices. It includes computers, radio, television, cell phones, broadcasting network, and unseen satellites orbiting above us which are constantly sending signals from one place to another. This is a technology that is constantly growing, and improving and thus cannot be truly defined for it is changing and growing every second. It is this technology that is connecting people from far corners of the globe closer to each other. Countries that lack adequate ICT facilities are poorer in ICT skills and are not likely to develop fast technologically (Information & Communication Technology skills school of information sciences 2007). The difference between the developed countries in

the world and developing countries is thus widening with the non-availability of ICT facilities and ICT skills in developing countries. The United Nations (UN) had shown concern about this disparity between countries and urged rich nations to provide ICT facilities to poor nations (Wise Article 2014).

Information Communication Technology (ICT) skills are those related to the use of computers and the ability to transmit stored information through fixed-line networks or wireless phone networks. This involves three steps of receiving digital data and it requires the skills to retrieve data.

The computer is a major component of ICT; it is a tool that has singularly and dramatically changed the behavioral pattern of people and corporate entities by deterring their interactions around the world. A surprising feature of ICT is that children master it more easily than their elders. Indeed there is a thinking that teachers in modern classes are lagging in ICT skills (Wise Article 2014). The future of ICT is therefore insecure with the coming generations if schools are not well equipped with facilities that will enhance the teaching of ICTs skills to students

LITERATURE REVIEW

Today, the world is continuously dominated by information and communication technology (ICT). It requires the following minimum skills as listed by the school of information sciences (2014).

- Understanding basic computer hardware components and terminology.
- Understand the concepts and basic functions and computer operating systems.
- Start up, log on, and shut down a computer system properly
- Use a mouse-pointing device and keyboard
- Use help and know how to troubleshoot routine problems
- Identify and use Icons (folders, files)
- Minimize, maximize and move windows
- Identify common types of files extensions (e.g. DOC Pdf, html)
- Check how much space is left on a device or other storage device
- Back up files
- Download and install operating systems
- Create documents of various types and save them in a desired location
- Retrieve an existing document from the saved location
- Select, copy and paste text in a document in a desired location
- Print a document
- Word processing
- Presentation (e.g. PowerPoint)

In time past, the primary source of information was the textbook. This is rapidly changing due to a large explosion in information technology and networked information. This awareness had come upon educators as well as the general public that technological proficiency is simply more than a particular set of commands or even how to use particular software. Students should be built from the basic level of education to use technology flexibly and creatively. Eisenberg (2008) states that students should to seized the task, and recognize how technology might help them to fulfill the task of ICT and then use technology to excel academically. This implies that aiding students on how to apply technology in these ways, requires a change in the way computer skills are traditionally taught. It means moving from teaching isolated computer skills to teaching integrated information communication technology skills. It is not just knowing about computers and accessories, students should acquire computer skills that can be used effectively.

The use of ICT helps in many ways to improve the efficiency of operations on one hand and the quality of results or the output on the other hand. Sasikala (2011) assessed the information literacy skills among science students of Andhra University. The study revealed the different level of ICT literacy skills among the students which includes mailing, browsing, and searching for information for further studies. Generally, the students have high internet searching literacy skills.

Omosor (2010) assessed the computer literacy skills of librarians at Delta State polytechnics. The assessment revealed the low computer

literacy skills of librarians in Delta State polytechnics. This resulted in the non-usage of the available computers for library operations. Similarly, Uddin and Hasan (2012) carried out a study on the use of ICT facilities among students in selected libraries in Banglash. The study revealed that the use of ICT facilities in the libraries studied is still in its early stage. This was attributed to the low level of ICT skills among professional librarians. In the same vein, Igere (2014) carried out a study on the use of ICT in the use of the internet among Library and information science students at Delta State University. The study reveals 83.87% of the students indicated low significant use of internet services due to low ICT skills among students. The study also reveals inadequate ICT facilities in the system and their previous schools, (Secondary schools) in a related development, Olaojo and Gbotosho (2012) assessed the availability of audio-visual media facilities in the teaching of social studies instruction at the junior secondary school level in Oyo State. The study reveals low availability of audio-visual facilities which are similar to ICT facilities of telephone, television, Radio, and projectors.

In a related development, Eze (2012) carried out a study of open access to literature initiatives on the perception and challenges of Nigerian Public libraries and librarians. The study reveals that none of the public libraries surveyed have functional internet facilities. In a similar study, Ejedafiru and Isebe (2010) surveyed the barrier to resource sharing. The study reveals lack of ICT facilities and required information literacy skills have hindered resource sharing amongst libraries in Nigeria.

Hackbarth in kareen, Seeland Cullen (2003) reported that elementary school students have only 10-60 minutes of access to information technology each week. This was due to inadequate time allotted to ICT at school. The study reported that K1 – 2 pupils gain their technology literacy skills at home. Adomi (2012) emphasized the urgent need for school librarians to be ICT compliant and school libraries to be equipped with computers as stipulated by the Unesco IFLA library manifesto so that elementary students will be equipped with ICT skills before entering tertiary institutions. Todd (2006) also opined that information communication skills (ICTs) help learners in gathering information from diverse sources, to identify important information, to organize, and record what they gather to enable them to define their information needs. Todd further stated that it helps in the process of creating information products that represent their newly developed understanding. Parveen (2012) study on the application of information and communication technology (ICT) by medical students, a case study of a government medical college, Chandigarh. Forty percent of the population requested ICT facilities in the library to enable the library to connect to other libraries for effective networking. Iwona (2008) noted that to utilize the growing range of electronic resources, students must possess and practice the skill necessary to exploit them. These skills include basic knowledge of computers, proficiency in using productivity, software; electronic communication skills as well as internet skills, Iwona further stated that there is a growing interest in universities.

From the literature reviewed, there are studies of the ICT skills level of different professional, tertiary institution students. Also, the literature revealed ICT facilities in libraries and tertiary institutions. There is a gap in the study of ICT skills and infrastructures in basic secondary schools. This study tends to fill this gap with the study of ICT skills among basic secondary schools and available facilities.

PURPOSE OF STUDY

This study was necessitated based on the recent pronouncement by the Joint Matriculation Admission Board (JAMB) which is the regulatory admission body to Nigerian tertiary institutions that state, as of 2015, the Unified tertiary matriculation examination (UTME) will be computer-based. This was re-echoed by the Ministry of Basic Education Delta State Nigeria on a Radio chat Pidgin English programme "Na so we see am" (12th June 2014) stating that the 2014/2015 promotion examination for Senior Secondary School two (SSS 2) to Senior Secondary School three (SSS3) will be computer-based. This is in a bid to prepare them for the Unified Tertiary Matriculation Examination

(UMTE) which will be computer-based. The study seeks to find out the available facilities in schools and the level of ICT literacy skills amongst students of Basic Secondary Schools in Delta State in preparation for the JAMB mandate.

JAMB is the regulatory body for admission into any tertiary institution in Nigeria. To partake in this examination, students will have to get to senior secondary school to write the final examination and get a certificate which is also an additional qualification to Nigerian tertiary institutions. It is therefore mandatory for SSS3 students to be ICT compliant.

OBJECTIVE OF THE STUDY

This study is guided by the following objectives.

1. To identify the available ICT facilities in the schools.
2. To assess the student's level of satisfaction with the available ICT facilities in the schools.
3. To assess the student's level of ICT basic skills
4. To identify the constraints of acquiring basic ICT skills

RESEARCH QUESTIONS

Based on the objective of the study, the following research questions were raised.

1. What are the available ICTs facilities in the schools
2. What is the level of satisfaction of students with the available ICTs facilities
3. What is the level of ICT skills of students?
4. What are the constraints of acquiring ICTs facilities

METHODS

The study employed a descriptive survey method using a questionnaire distributed to a total of three hundred and fifty (350) students which is 100% of the population of Senior Secondary Students three (SS3) from four secondary schools which are public schools (Government owned) and Private schools (owned by an individual) in two senatorial districts of North and South were purposively selected from the three senatorial districts in Delta State. Purposive sampling was used because the population is magnanimous for study. The government schools are Akashiede Girls Secondary and Egbo secondary schools. The private schools are All Saints Secondary School and Perpetual secondary School. These schools are located in urban and rural areas of the two senatorial districts studied. Copies of the questionnaires were distributed to students when they were taking their first term examination.

INSTRUMENT FOR DATA COLLECTION

Assessment of ICT skills level of competency survey questionnaire (AILCSQ) designed by the researcher after the literature review was used to elicit information on students' responses on the available ICT facilities and level of ICT skills. Two scale rating of Yes and No was used to assess the available ICT facilities. The three-point scale of very satisfied, satisfied, and not satisfied was used to assess the level of satisfaction with ICTs facilities. In assessing the efficiency of the student's level of ICT skills, a four-point scale of very effective, effective, not effective, and undecided was used. To find out the constraints to acquiring ICT skills, a four-point scale of strongly agreed, agreed, disagreed, and strongly disagreed was used.

Data analysis: Data was collated and analyzed using descriptive statistics. Descriptive measures such as frequency distribution percentages, and mean were used to answer the research questions.

FINDINGS

Table 1: Name of school, ownership, sensational District, and number of students in SSS3

S.N.	Name of school	Ownership	Senatorial district	No of students
1	Akashiede Girls Grammar Sch.	Govt.	North	120
2	All saints secondary school	Private	Central	60
3.	Egbo secondary school	Govt.	Central	80
4	Perpetual secondary school	Private	North	90
	Total			**350**

Table 1 shows the schools surveyed, the senatorial districts in each school located, and the student population in each school. Akashiede Girls grammar school has the highest number of students 120.This was followed by Perpetual secondary school with 90 students. Egbo secondary and All Saints Secondary have a population of 80 and 60 respectively. The total population used for the study was 350.

Table 2: Copies of the questionnaire administered, and copies retrieved visible numbers were used for analysis.

S.N.	Name of school	Copies of questionnaire administered	Copies retrieved	Visible no	%
1	Akashiede girls college	120	100	93	77.5
2	All saints secondary school	60	60	60	100
3.	Egbo secondary school	80	75	70	87.5
4	Perpectual secondary school	90	87	85	94.4
	Total	**350**	**322**	**308**	**89.8**

Table 2 shows the schools surveyed, copies of the questionnaire distributed, numbers retrieved, and usable numbers for the analysis of data. A total of three hundred and fifty copies of questionnaires containing fifty-six items were distributed, based on the number of SSS3 students in the schools surveyed gotten from the school registrar for the 2020/2021 session. Three hundred and twenty-two copies (322:92%) were retrieved, and three hundred and Eight (308, 89.8%) that were duly filled were used in analyzing the data.

Research Question 1: the students were asked to Agree on the Available Facilities

Table 3: shows respondents' responses about the available facilities in their school

S.N.	Facilities	Yes		No	
		No.	%	No.	%
1	Desktop computers	100	32.4	208	67.5
2	Laptop computers	120	38.9	188	61
3	Scanner	57	18.5	251	81
4	Printers	120	38.9	188	61
5	Multimedia projector	123	39.9	185	60
6	Digital camera	59	19.1	249	80.8
7	Photocopier	120	38.9	188	61
8	CD-Roms	154	50	154	50
9	Internet connection	30	9.7	278	90.2
10	LAN	30	9.7	278	90.2
11	Identity card printer	36	8.4	282	915
12	Telephone Wireless	171	55.5	137	44.4

Table 3 reveals students' responses to the available ICT facilities in the schools. The highest response to yes of available facilities was telephone wireless 71(555) response. This was followed by CD-Roms with 154 (50%) respondents. The majority of the students indicated no to identity card printers with a response rate of 282 (91.5%). This was followed by internet connection and LAN which recorded 278 (90.2%) respondents. The response rate of non-available facilities is higher than that of available facilities. The table clearly shows that ICT facilities are rarely available in schools.

Table 4: Students' level of satisfaction with ICT facilities

S.N	Facilities	V. Satisfied		Satisfied		Not satisfied	
		No.	%	No.	%	No.	%
1	Desktop computers	7	2.2	96	30.8	206	66.8
2	Laptop computers	13	42	101	32.7	194	62
3	Scanner	5	1.6	80	25.9	223	72.4
4	Printers	38	12.3	170	55.1	100	32.4
5	Multimedia player	48	15.5	60	19.4	200	64.9
6	Photocopier	33	10.7	109	35.3	163	52.9
7	CD-Roms	8	2.6	130	42.2	170	55.1
8	UPS	13	4.2	95	30.8	200	64.9
9	Internet connection	2	0.6	10	3.2	296	96.10
10	Telephone Wireless	69	22.4	112	36.3	130	42.2
11	Digital camera	7	2.2	15	4.8	286	92.8

Table 4 reveals the respondent's rate of satisfaction with ICT facilities in the schools. The majority of the respondents 296 (96.%) were not satisfied with the internet connection. This was followed by those who were not satisfied with a digital camera which rated 286 (92.8) respondents. Telephone wireless recorded some level of satisfaction with 112 (36.3) this was followed by multimedia player with 60 (19.4) of the respondents.

Table 5: Level of ICTs skills of students.

S.N.	ICT skills	V. Effective		Effective		Not effective		Undecided		Mean
		No	%	No	%	No	%	No	%	
1	I can turn on computer	75	243	103	33.4	100	32.4	30	9.7	2.7
2	I know how to open computer file	75	243	103	33.4	89	28.8	41	13.3	2.7
3	I can connect and operate a printer	73	23.7	109	35.3	100	32.4	26	8.4	2.7
4	I can connect and use the mouse	75	24.3	107	34.7	95	30.8	31	10.1	2.7
5	I can use Microsoft to type any document	75	24.3	107	34.7	100	32.4	26	8.4	2.8
6	I can draw with the computer	25	8.1	31	10.1	192	62.3	60	19.4	2.0
7	I can send and open mail from the internet	28	9.1	75	24.3	94	30.5	9	2.9	1.7
8	I can connect and use the multimedia projector	2	0.6	3	0.9	210	68.1	87	28.2	1.7
9	I can create an application	-	-	3	0.9	250	81.1	55	17.8	1.8
10	I can log off the computer	72	23.3	103	33.4	100	32.4	33	10.7	2.7
11	I can create a file	4	12.9	10	3.2	270	87.6	12	3.8	1.9
12	I can save a file	7	2.2	19	6.1	270	87.6	12	3.8	2.1
13	I can lock the screen when I leave the computer	2	0.6	3	0.9	208	67.5	95	30.8	1.7

Table 5 revealed the ICT skills competency level of the students. The table revealed the highest mean of 3.8 of those who can create a file and save a file. This was followed by a mean rating of 2.8 for those who can use Microsoft to type any document. Those who can turn on the computer, open computer files, operate the printer, connect the mouse and log off the computer rated a mean score of 2.7. The table also revealed the mean score of 1.7 for those who can open mail from the internet, multimedia projector, and lock the screen when leaving the computer.

Table 6: Constraints to Possessing ICT skills

S.N.	Constraints	SA		A		DA		SD		Mean
		No	%	No	%	No	%	No	%	
1	Not allotted in the school timetable	92	29.8	179	58.1	34	11	3	0.9	3.2
2	The period allotted to it is not enough	92	29.8	165	53.5	46	14.9	5	1.6	3.1
3	Electricity interruption	122	39.6	107	34.7	64	20.7	15	4.8	3.1
4	Lack of training centers close to my resident	50	30.5	115	37.3	74	24	25	8.1	2.9
5	Lack of fiancé to purchase ICT facilities	25	8.1	47	15.2	213	69.1	25	8.1	2.2
6	Inadequate ICT facilities in my school	145	47	103	33.4	31	10.1	29	9.4	3.2
7	No ICT laboratory in my school	120	38.9	125	40.5	20	6.4	43	13.9	3.0
8	The heavy class workload in other subjects	25	8.1	6	1.9	38	12.3	251	81.4	2.3
9	Non-functional ICT facilities	50	16.2	71	23.1	175	56.8	12	3.9	2.0
10	It is to hard to study	25	8.1	38	12.3	251	81.4	6	1.9	2.3
11	Lack of qualified ICT Teacher	145	47	103	33.4	29	9.4	31	10.0	3.2

SA = Strong Agreed A= Agreed: DA = Disagreed. SD = Strongly Disagreed

Table 6 reveals the constraints that are hindrances to the acquisition of ICT skills. The highest mean rating of 3.2 of the students agreed that the teaching of ICT skills is not allotted period in the school timetable, lack of a school library with ICT facilities, and lack of qualified teachers. The next mean rating of 3.1 respondents believed that enough time is not allotted to it, electricity interruption, and lack of functional ICT facilities. This was followed by a mean rating of 3.0 respondents who agreed to the lack of ICT-qualified staff was a constraint to acquiring ICT skills.

DISCUSSION

Available Facilities: The study indicates insufficient ICT facilities in the schools. This study collaborates Eguaven and Adeyemi (2003) study on the time use of ICT facilities in selected libraries in Nigeria. The study inadequate ICT facilities in the libraries studied. The study also collaborates Eze (2013) where the lack of facilities hindrance internet connection in Nigerian university libraries. The study can also be compared to Aminu (2009) in the study of the use of ICT in Polytechnic engineering classrooms which recorded low ICT facilities. In the same vein, the study also collaborates Ejedafiru (2010) which revealed that the lack of ICT facilities hinders resource sharing among Nigerian universities. The inadequacy of ICT facilities may be due to a lack of sufficient funds from the state holders of the institutions.

Level of satisfaction with ICT facilities

Respondents were not satisfied with the majority of available facilities in the schools. This study collaborates Gambari and Chike-Adaeze (2014) on the availability and utilization

of information and communication technology facilities in higher institutions in Niger State of Nigeria. The study reveals a low level of satisfaction with ICT facilities by students and faculty members. The study is in line with Hackbarth in Kareen, seel, and Cullen (2003) study on fresh students of Colorado State university's ability to use technology. One of the constraints was that only 10-60 minutes is allocated in the school timetable in a week to access technology tools.

Level of ICT Skills

The students' ICT skills level of competency rated low in the majority of the ICT skills. This can be attributed to non-available facilities in the schools. This finding is supported by Omosor (2010) and Aminu (2009) on low ICT skills among librarians in Delta State Polytechnics. The study also revealed that students have a different level of ICT skills. The study is in line with Sasikala (2011) on ICT skills among students of Anddra University which revealed the different levels of ICT skills among the students. The level of ICT skills can affect the attitude of the students towards using ICT facilities.

Constraints of acquiring ICT skills

The schools studied were affected by six (6) major constraints namely, not allotted time in the timetable; time allotted not enough, interruption of electricity, no ICT laboratory, and lack of qualified ICT teachers. The study collaborates with Gambari and Adaeze (2014) on the constraints of ICT skills of students in selected universities in higher institutions in Niger State Nigeria which reported irregular power, inadequate ICT, and limited duration of use of available facilities. The study is in line with Hackbarth in Kareen, seel, and Cullen (2003) study on fresh students of Colorado State university's ability to use technology. One of the constraints was that only10-60 minutes were allocated in the timetable a week to access the ICT facilities. It is certain that the more one is exposed to ICT facilities the more competent the students skills on ICT.

CONCLUSION

This study inquired into the availability of ICT facilities and the level of ICT skills among senior secondary school students in Delta State in anticipation of the Unified Tertiary Matriculation Examination. The availability of adequate and functional ICT facilities in schools in this era of information technology is a necessity and not optional. ICT is very important in any educational sector for processing and accessing information. It is evident that there are inadequate ICT facilities in the schools and the ICT skill of the majority of the students is low. There are some facilities where the students do not have any knowledge of their skills that will enhance their performance in the computer base JAME examination.

The students also faced the challenges of qualified ICT personnel in the school who will power supply is also a hindrance to the acquisition of ICT skills of the students.

RECOMMENDATIONS

- In light of the above findings, the following recommendations are made.
- The ministry of education should provide enough ICT facilities to the schools.
- Quality time should be allotted in the timetable for students to be taught how to use all the ICT facilities.
- The teaching of ICT should commence from the Junior Secondary School One (JSS1) so that before getting to SSS3 the students should have been well equipped with ICT skills.
- The ministry of education should help to organize periodic workshops, seminars conferences, and in-service training programs for school teachers on ICT skills. It is what you have, you give others. If the teachers are not knowledgeable with ICT skills, they will not be able to impact the skills of the students.

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