

## Influence of Economic Recession on Availability of ICT Facilities for Teaching Science in Rivers State

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### **Abstract**

*The study examined the influence of Economic Recession on availability of Information Communication Technology Facilities for teaching Science in secondary school in Rivers State. The study adopted descriptive research design. The population of the study comprised of 167 science teachers of all 26 government- owned secondary schools in Port Harcourt metropolis. All 167 science teachers were used for the study. The instrument used to generate data was “ICT Availability Questionnaire“. Three research questions guided the study. Simple percentage and mean were employed to analyze and answer the research questions. The results showed that ICT facilities were not available in most of the secondary schools in Port Harcourt metropolis. The ones available were not adequate for effective teaching/learning process; economic recession in Nigeria negatively affects the provision of ICT facilities in secondary schools in Port Harcourt metropolis. Finally, ICT facilities improve effective teaching of science in secondary schools in Port Harcourt metropolis. Appropriate recommendations were made to include: Government (State and Federal) should endeavour to provide ICT facilities to schools; Government ( both State and Federal) should make conscious efforts to diversify the economy in order to boost its revenue base to overcome economic recession, etc.*

**Key words:** Economic recession; ICT facilities; Teaching; Science.

### **Introduction**

Information and Communication Technology (ICT) is gaining global attention in the evolution of information dissemination (NOUN, 2012). ICT is a general term used for wide range of electronic devices or applications that aid communication, like micro-computer, telecommunication network, internet, television, radio, cellular phones, computers and its softwares, satellite system, projectors, electronic boards, etc. ICT is necessary and even a dependable instrument for the attainment of some of the Millennium Development Goals (MDGs). According to Ayodele (2002) in Ezeand Aja (2014), ICT is an “electronic-based technology that is generally used to store, retrieve, process and package information as well as provide access to knowledge. The introduction of ICT has enhanced effective communication. In education, ICT includes, but not limited to, computers, desktops, laptops, notebooks, digital cameras, local area network (LAN), internet, CD ROM, DVDs,

applications like spread sheets, MS Word, tutorial simulations, electronic mails, e-libraries, teleconferencing, video conferencing, virtual reality. etc (Ugwu& Oboegbulem, 2011).

ICT provides greater opportunity for students and teachers to adjust the teaching-learning process to individual needs. Hence, ICT has become one of the fundamental and inevitably tools for modern education. In Nigeria, there is an evolving trend of Integrating ICT into the teaching and learning environment. Due to the importance of ICT, conscious efforts are made to provide ICT facilities in our schools. However the current economic situation in Nigeria, with its attendant low cash flow, has made it difficult to provide the basic ICTneeds of schools.

Economic recession is a crisis in the business cycle which results in a general slowdown in economic activities and negative economic growth in at least 6 months (Eneji.,Dimis&Umejiaku, 2017). Economic recession is also described as a significant decline in economic activities spread across the macro economy and characterised by increased unemployment, low industrial production and low wholesale retail sales (Karma, 2012). In Nigeria economic recession is caused by a lot of factors, some of which included; over-dependence on crude oil, lack of economic diversification and over reliance on imports, fall in global oil price, worsened by oil pipeline vandalism and depletion of foreign reserves and corruption among others. The economic recession in Nigeria is blamed on many factors which include inactions of the federal leadership, corruption and misappropriation of public funds, etc. (Noko, 2016). In spite of this economic hardship and dwindling resources, investment in education cannot be relegated.

### **Statement of Problem**

In order to improve the teaching-learning process educators have developed the use of instructional aids. ICT resources as instructional aids have been widely accepted. The importance of ICT resources in the teaching-learning process cannot be over-stressed. To this effect, school administrators make efforts to ensure the availability of ICT facilities in their schools. But the provision of ICT facilities lies squarely on the school owners, be it public or private. In public schools, it is the responsibility of government (both State and Federal) to provide them for the usage of both teachers and students. With the current economic recession in Nigeria is the government still able to provide ICT facilities in the secondary schools? If they do, is it adequate to facilitate effective teaching? These are the issues which the study hopes to address.

### **Purpose of the Study**

The purpose of the study includes;

- (i) To ascertain the ICT facilities available for teaching Science in Port Harcourt Metropolis.
- (ii) To examine the influence of economic recession on the provisions of ICT facilities in schools in Port Harcourt Metropolis
- (iii) To examine the influence of ICT facilities on the teaching of Science in Port Harcourt Metropolis.

## Research Questions

The following questions guided the study;

1. What are the ICT facilities available for teaching Science in Port Harcourt Metropolis?
2. Has economic recession influenced the provision of ICT facilities in schools in Port Harcourt Metropolis?
3. What influence has ICT facilities on the teaching of Science in Port Harcourt Metropolis?

## Methodology

Descriptive research design was used. The study area was Port Harcourt Metropolis consisting of Port Harcourt and Obio/Akpor Local Government Areas of Rivers State. The population of the study comprised of 167 Science teachers of all 26 government-owned secondary schools in Port Harcourt Metropolis (12 schools in Port Harcourt and 14 schools in Obio/Akpor L.G.As) (RSSSB, 2016). All 167 Science teachers were used for the study. Hence, purposive sampling technique was used. The instrument used to generate data for the study was a questionnaire titled "ICT availability questionnaire" (ICT-AQ). It shows availability and non-availability responses which were analyzed using simple percentage. A modified 4 point likert scaled was also adopted as follows;

Strongly agree (SA) -4 points, Agree (A) - 3 points, Disagree (DA)-2 points and Strongly disagree (SD)- 1 point

ICT-AQ was validated by two experts; 2 of measurement and evaluation and 1 of Science Education. The reliability of the instrument was ensured using test-retest method. Pearson Product Moment correlation coefficient was employed and a value of 0.78 was realised.

## Results

**Decision Rule:** Mean value of 2.50 and above was accepted; value below 2.50 was rejected.

**Research Question 1:** What are the ICT facilities available for teaching Science in Port Harcourt Metropolis?

**Table 1:** Mean response of respondents for ICT facilities available for teaching Science in Port Harcourt Metropolis

SN	ITEM STATEMENT	RESPONSES					Decision
		Available (A)	Not Available (NA)	Total respondents (N)	Percentage available (%A)	Percentage not available (%NA)	
	Your school have the following functional materials/services for teaching of science.						
1.	Computers	56	11	67	83.58	16.42	A
2.	Radio instruction	-	67	67	-	100	NA
3.	Television instruction	-	67	67	-	100	NA
4.	School-provided internet services	16	51	67	23.88	76.12	NA
5.	Overhead projectors	8	59	67	11.94	88.06	NA
6.	Scanners	33	34	67	49.25	50.75	NA
7.	Printers	52	15	67	77.61	22.39	A
8.	Multimedia boards	-	67	67	-	100	NA
9.	Teleconferencing	-	67	67	-	100	NA
10.	Slide projectors	31	36	67	46.27	53.73	NA
11.	e-learning website	-	67	67	-	100	NA
12.	ICT Laboratory	34	33	67	50.75	49.25	A
13.	e-library	-	67	67	-	100	NA
14.	Simulation programmes	-	67	67	-	100	NA
15.	Electricity	52	15	67	77.61	22.39	A
16.	Generator	8	59	67	11.94	88.06	NA
17.	VCD/DVD/CD	45	22	67	67.16	32.84	A

N/B: A = Available

NA = Not Available

In Table 1 presented above, respondents agreed that only items 1,7, 12, 15 and 17 are available. The rest are not available. This means that, of all the seventeen (17) ICT facilities examined, only five (5) which is 29.49% are available, while twelve (12) which is 70.59% are not available in Port Harcourt Schools.

**Table 2:** Mean response of respondents on the influence of economic recession on the provision of ICT facilities in schools in Port Harcourt Metropolis

SN	ITEM STATEMENT	RESPONSES							$\bar{x}$
		SA (4)	A (3)	DA (2)	SD (1)	N	FX		
1.	ICT facilities available in my school were provided before 2016.	88	111	10	3	67	215	3.2	
2.	ICT facilities available in my school were provided recently 2016.	28	30	60	20	67	138	2.1	
3.	High cost of materials makes improvisation difficult	136	57	28	-	67	221	3.3	
4.	Periodic maintenance of ICT facilities is impossible due to insufficient funding	148	66	8	2	67	224	3.3	
5.	The government still provides ICT facilities until now (August, 2017).	60	27	34	26	67	147	2.2	
6.	There is an increase in the frequency of supply of ICT materials brought to my school in recent time.	-	-	48	43	67	91	1.4	
7.	There is a decrease in the frequency of supply of ICT materials brought to my school in recent time.	148	90	-	-	67	238	3.6	
8.	There is a decline in the frequency of ICT workshop/seminar organized for teachers in recent time.	176	69	-	-	67	245	3.7	
9.	There is an increase in the frequency of ICT workshop/seminar organized for teachers in recent time.	-	-	64	35	67	99	1.5	
10.	More ICT materials were supplied /provided recently (2016-date) than before.	120	75	16	4	67	215	3.2	
11.	More ICT resources were supplied /provided before 2016 than now.								
<b>Grand mean</b>							<b>(67%)</b>	<b>2.7</b>	

Result presented on Table 2 above showed that economic recession has impact on the provision on ICT facilities in schools in Port Harcourt Metropolis. The mean response of 2.7 (67%) was realized. Economic recession impacted negatively on the provision of ICT facilities in our schools.

**Research Question 3:** What influence has ICT facilities on the teaching of Science in Port Harcourt Metropolis?

**Table 3: Mean response of respondents on the influence of ICT facilities on the teaching of Science in Port Harcourt Metropolis**

SN	ITEM STATEMENT	RESPONSES							$\bar{x}$
		SA (4)	A (3)	DA (2)	SD (1)	N	FX		
1.	ICT resources make teaching easier	92	114	12	-	67	218	3.3	
2.	ICT resources make teaching/learning simpler and more concrete.	128	81	10	3	67	222	3.3	
3.	Hands-on activities are made possible with ICT resources.	184	63	-	-	67	247	3.7	
4.	The use of ICT resources improves the teaching-learning process.	208	45	-	-	67	253	3.8	
5.	The use of ICT resources enhances the retention ability of students.	168	75	-	-	67	243	3.6	
6.	The use of ICT resources enhances the performance of students.	188	48	8	-	67	244	3.6	
<b>Grand mean</b>							<b>(88.75%)</b>	<b>3.55</b>	

The results of the table 3 above revealed a mean values above 2.50 for all the items. This showed that ICT resources have positive impact on the teaching of Science, with a grand mean value of 3.55 (88.75%).

### Discussion of Findings

The findings revealed that some ICT facilities like computers, printers, ICT laboratories, Electricity (power supply) and VCD/DVD/CD are available in secondary schools in Port Harcourt metropolis. However, the rest including, Radio, Television, Internet services, overhead projector, etc are either in short supply or not available. With the non-availability of these ICT resources or facilities, the teaching of science becomes difficult. This would also impact negatively on the students.

It was also discovered that Economic recession has negative impact on the provision of ICT facilities in schools. Economic recessions affects the purchasing power of the school owners. Consequently, the provision of ICT facilities was hampered. Hence, government – state and federal, found it difficult to provide instructional materials, including ICT facilities to schools, especially during economic recession.

Finally, it was found that ICT facilities have positive impact on the teaching of science. It also enhances the understanding of scientific concepts and principles. With the use of ICT facilities, teaching becomes easier, while learning becomes simpler and more

concrete. The use of ICT facilities encourages hands-on activities and improves students' retention.

### Summary of Findings

1. ICT facilities are not available in secondary schools in Port Harcourt Metropolis. The few ones available are grossly inadequate.
2. Economic recession has negative impact on the provision of ICT facilities in schools in Port Harcourt Metropolis.
3. ICT resources have positive impact on the teaching of Science.

### Conclusion

ICT in education has come to stay as it improves the teaching-learning process. It has been incorporated into the education system the world over. The researcher has made concise efforts to examine ICT facilities available in secondary schools in Port Harcourt Metropolis. The impact of economic recession on the provision of ICT resources was investigated and the impact of ICT materials on the teaching of Biology was finally examined.

### Recommendations

The following recommendations were given;

1. Government- state and federal should endeavour to provide ICT facilities to schools.
2. Government – state and federal, should make conscious efforts to diversify the economy in order to boost its revenue base to overcome economic recession. This would enhance availability of fund for the provision of ICT materials to schools.
3. Teachers should endeavour to utilize available ICT facilities in other to improve teaching in secondary schools.

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