

**ASSESSMENT OF ADHERENCE TO DESIGNED STRATEGY FOR
INFORMATION AND COMMUNICATION POLICIES
IMPLEMENTATION**

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Abstract

The study assessed the extent of adherence to designed strategy for implementation of Information and Communication Technology policies in public secondary schools in Rivers State Nigeria. Three research questions and two hypotheses were posed to guide the study. The descriptive survey research design was adopted. The population of the study comprised all the 15,941 teachers in public secondary schools in Rivers State. Sample for the study consist of two thousand, four hundred public secondary school teachers (2,400) 15% of the target population. The random sampling technique was used to draw the sample size for the study. Instruments used for data collection were interview schedule and questionnaires. Face and content validities were ensured. Kuder Richardson (KR.20) and Cronbach Alpha statistics were used to establish a reliability index of 0.82 & 0.78 respectively. Mean and rank order statistics was used to answer research questions 2&3, z.test of difference was used to test the hypotheses. While simple percentage and bar chart was used to answer research questions 1. Findings revealed that to a low extent, designed strategy were followed and some ICT policies were implemented but poorly implemented. Most public secondary school teachers in Rivers State are not ICT compliant. They were not able to acquire ICT skills. It was recommended amongst others that government should ensure that teachers are regularly trained and retrained on ICTs in order to ensure that the Nigerian society is not digitally divided. Teachers should embark on self-development to enable them acquire better computing and ICT skills to be able to use the computer to generate and process information and effectively use it for instructional delivery and so become ICT compliance.

Introduction

Information and communication technology (ICT) is a conglomerate of computers and telecommunication equipment used for the manipulation, processing, gathering, analyzing as well as storing of information. It is a recent innovation that has made the acquisition of information easy in this modern day. The advent of the internet, broad connections and broad wave transmission energy brought about development from Information Technology (IT) to Information and Communication Technology (ICT). The entrance of information and

communication technology into the system has re-patterned the way we perceive things, our mode of communication, our behaviour, the way we conduct businesses and the way we relate with each other etc. ICT is the infrastructure of the knowledge economy. Though a recent innovation, literacy in ICTs is the bedrock for the achievement of building a knowledge economy.

From the historical perspective, information and communication and technology began in Nigeria in the later part of 19th century. After a long period of military rule in Nigeria and upon the realization of the potential benefits of Information and Communication Technologies (ICTs) to national development came the need and desire to develop a platform for the development of ICTs for the purposes of avoiding digital divide and becoming a knowledge based society and one of the 20 leading economies of the world by the year 2020 using ICTs. With this desire, several ICT policies were made. First was the liberalization policy of the federal government which gave rise to huge investment made by both public and private sectors in ICT business in Nigeria, and which brought about swift expansion in ICT resources and facilities. In agreement to this view, the Nigerian National Information Communication Technology Policy (2012) as outlined by the Ministerial committee on ICT Policy harmonization, the development in ICT sector in Nigeria before 1999 was quite beyond expectation in-view of the size and resource available to Nigeria. It maintained that “total fixed telephone lines were less than 400,000 while regular internet users were less than 200,000 (p.8). It further asserts that by the first quarter of 2011, Nigeria has over 90.5 million mobile telephone lines. By this figure, Nigeria is adjudged the fastest growing telecommunication market in Africa.

As opined by Yusuf (2007), “policy initiatives since 1988 have been targeted at ensuring the integration of Information and Communication Technology in the Nigeria school system” (p.1). Yusuf maintained thus:

Although computer entered into the country’s education system in the late 70’s and early 80’s, no concrete policy was evolved for its entry into the nation’s education system until the evolution of the National Policy on Computer Education in 1988. (Federal Republic of Nigeria, FRN, 1988). The document contained information on the application of computer at various levels of the country’s education and with issues related to basic objectives, hardware and software requirement. The documents also comment on teacher training, especially, at the secondary school level. The implementation of the policy was kick started with a training programme conducted for 197 teachers from across the country. In addition, computer systems were introduced into the Federal Unity Schools and armed forces secondary schools. However, the initial enthusiasm gave way and little was achieved about the set objectives (p.1).

From the foregoing, it has been observed that Nigeria began the development of ICT policy in 1988 with the development of the National Policy on Computer Education enacted that same year. Thirteen years after the development of the

National Computer Policy came the development of the Information Technology (IT) Policy of 2001. This was followed by the development of the ICT for Development Plan (ICT4DPlan 2008-2011) and subsequently, came the development of the 2012 National Information and Communication Technology (ICT) Policy. These policies were drawn by different administrative leadership with different vision and mission statement all aimed at harnessing the power of information and communication technology for national development.

The goal of the National Policy on Computer Education was to bring about a computer literate society in Nigeria by the mid 1990's and to enable school children to appreciate and use computer in various aspects of life and for future employment. The major highlights were to ensure that the general populace appreciates the impact of information and computer technology and to understand the effective use as well as the technologies that process, manage and communicate the information (Jegede & Owolabi, 2003 p.8). Implementation strategies designed for the achievement of set objectives as contained in this policy statement were:

- (1) Training of teachers and associate personnel
- (2) Hardware facilities
- (3) Curriculum development
- (4) Software development and evaluation.

The role of education in bringing about national development cannot be over-emphasized. The Federal Republic of Nigeria (FRN 2004) attest to this view when she stated in its national policy on education that: "education in Nigeria is an instrument "per excellence" for effecting national development" (p.4). It is believed that based on this statement, the training of teachers and associate personnel was made the first strategy to be adopted for the implementation and achievement of the goals of the National policy on computer education of 1988. It should be noted that prior to the 1988 National policy on computer education which brought about the integration of computer into the education system in Nigeria, ICT was barely mentioned in previous national policies in education. Upon the conviction of the federal government of Nigeria on the power of ICT in bringing about knowledge discovery and national development, ICT was included in the national policy on education. Based on the aforesaid, (FRN 2004) noted that "government shall provide necessary infrastructure and training on the integration of ICT in the scheme of education in order to appreciate the role of ICT in advancing knowledge and skill in the modern world" (p. 24).

Computer is a major component of Information and Communication Technology. As a major component of information and communication technology, it provides direct assistance to learners. It assists teachers, educational technologists and administrators in helping learners. For example, by connecting a device to the computer, users may work individually in groups (online) or using some medium later entered into the computer (offline). Globally, the evolution of the application of modern computer technology into teaching and/or learning process has been a success.

Statement of the problem

In the recent past, several ICT related policies and laws aimed at guiding the development of the sector and harnessing its power for national development have been initiated and adopted by different political leaders in the country. In spite of the efforts made by the Federal Government of Nigeria, it seems that there are loopholes in ICT policies implementation. The policies of ICT in secondary schools are very clear but the implementation of these policies in Rivers State is yet to be fully appreciated, hence the need to investigate the extent of implementation of ICT policies for secondary schools teachers in Rivers State as it concerns adherence to strategies mapped out for the implementation and achievement of ICT policies objectives. The elements of the problem therefore bother on the following: Are on-the-job training programs organized for teachers on computer/ICT as required by these policies? Have public secondary school teachers in Rivers State been able to acquire computing/ICTs skills through the on-the-job train-the-trainer programmes on ICT organized for them? To what extent are public secondary school teachers in Rivers State ICT compliant?

Aim and objectives of the study

The aim of this study was to assess the extent of adherence of the strategies mapped out for the implementation of ICT policies in public secondary schools in Rivers State.

Specifically, the study sought to:

1. ascertain the on-the-job basic computer/ICT training programmes organized for teachers in public secondary schools in Rivers State;
2. find out the computing/ICT skills acquired by public secondary schools teachers through the on-the-job training programme.
3. investigate the extent to which public secondary teachers are ICT compliance

Research Questions

The following research questions guided the study:

- 1 What are the on-the-job basic computer literacy training programmes organized for public secondary schools teachers in Rivers State?
- 2 What are the computing/ICT skills acquired by public secondary schools teachers in Rivers State through on-the-job computer/ICT training programmes?
- 3 To what extent are secondary schools teachers in Rivers State ICT compliant?

Hypotheses

The following hypotheses were formulated for the study:

1. There is no significant difference between the mean scores of teachers in Urban and Rural areas on the computing/ICT skills acquired by public secondary school teachers through on-the-job computer/ICT training programmes.

2. There is no significant difference between the mean scores of teachers in Urban and Rural areas on the extent of ICT compliance of secondary school teachers.

Research Methodology

The descriptive survey research design was adopted for this study as it explained in details the extent of adherence to implementation strategy mapped out for the achievement of ICT objectives in public secondary schools in Rivers State.

Population for the Study

The study population consisted of fifteen thousand, nine hundred and forty-one (15,941) public secondary schools teachers in Rivers State.

Sample and Sampling Technique

The sample size for the study consisted of two thousand, four hundred teachers representing 15% of the target population. The random sampling technique was used to draw the sample.

Instrument for Data Collection

The instrument for the study consisted of a well-structured questionnaire code-named AADICTQ Assessment of the adherence to designed strategy for information and communication policies implementation in secondary schools in Rivers State. A 20-item questionnaire were structured on the 4-point modified Likert scale of Strongly agreed (4), Agreed (3), Strongly Disagreed (2), Disagreed (1). It was used to elicit information for research questions 2&3. Also, a 5-item Interview Schedule titled: "On-the-job ICT Programmes Interview Schedule (OICTPIS) were used to elicit information for research questions 1 with a response option of 'organized/not organized'.

Validity of the Instrument

Content and face validities of these instruments, were subjected to professional analysis by three experts in educational management who scrutinized the instruments in terms of appropriates of content, relevance to objective of the work and clarity of words.

Reliability of the Instrument

Kuder Richardson (KR.20) and Cronbach Alpha statistics were used to establish a reliability index of 0.82 & 0.78 respectively.

Method of Data Analysis

Simple percentage and bar chart were used to answer and present research question 1 while mean and rank order statistics were used to answer research questions 2 & 3 with a criterion mean of 2.50. z-test statistics were used to test the hypotheses at 0.05 significant level.

RESULTS

Research Question 1: What are the on-the-job basic computer literacy training programmes organized for public secondary schools teachers in Rivers State?

Table 1: Percentage score representation of teachers responses on the on-the-job basic computer/ICT literacy programmes organized/not organized for public secondary school teachers in Rivers State.

S/NO	ON-THE-JOB COMPUTER/ICT PROGRAMMES	(ORG)	(%)	(NORG)	(%)
1.	Basic computer literacy training programmes	2256	94%	144	6%
2.	3months train-the-trainer programme	1900	63%	500	37%
3	Preparing Education courses	-	-	2400	100%
4.	Learning tools for assessment software.	-	-	2400	100%
5	Basic ICT skill courses	1900	63%	500	37%

KEY:

ORG: Organized

NORG: Not Organized

On-the-job basic computer/ICT literacy programmes organized for public secondary school teachers in Rivers State for the implementation of computer/ICT policies were assessed in five different areas. The interview schedule was used to elicit information from teachers in public secondary schools in Rivers State. Findings revealed that 94% of the respondents indicated that basic computer/ICT literacy programme was organized while (6%) of the teachers indicated that basic computer/ICT programme was not organized or that they had no idea of whether such programmes were organized or not. 1900 (63%) of the teachers agreed that 3 months train-the-trainer and basic ICT skills was organized. The rest were not.

Teachers’ responses on the on-the-job ICT training programmes organized for public secondary school teachers in Rivers State is further depicted in figure 1:

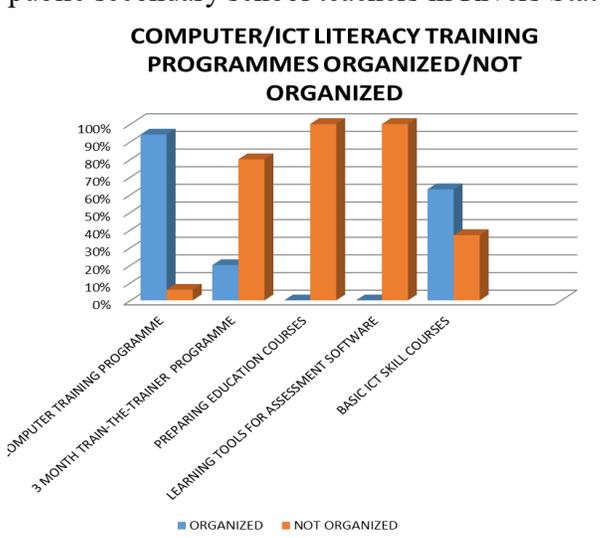


Fig 1: Bar chart showing % of teachers response on the on-the-job ICT training programmes organized/not organized for secondary school teachers in Rivers State.

From this chart, computer/ICT programmes that were not organized for public secondary school teachers were depicted in red while the organized programmes were marked in blue. It shows that 80% of the teachers agreed that two of the programmes out of five tested i.e basic computer/ICT literacy programmes and basic ICT skill courses were organized for teachers in public secondary schools while the remaining three programmes were not organized as 100% of the teachers indicated not organized.

Research Question 2: What are the computing/ICT skills acquired by public secondary schools teachers in Rivers State through on-the-job computer/ICT training programmes?

Table 2: Mean and rank order (x) statistics of teachers in the urban and rural areas of the state on the computing/ICT skills acquired by public secondary schools teachers in Rivers State through on-the-job computer/ICT training programmes.

S/ N	ASSESSED VARIABLES	TEACHERS URBAN (1000)	TEACHE RS RURAL (600)	SET MEAN $\frac{X_1 + X_2}{2}$	RANK	REMARK
1.	Basic ICT skills	2.50	2.50	2.50	3 rd	ACQ.
2.	Word Processing	1.30	1.00	1.15	8 th	NACQ
3.	Spreadsheets	1.40	1.30	1.35	6 th	“
4.	Browser basics	1.40	1.20	1.30	7 th	“
5	Virus/malware scanning	1.30	1.40	1.35	5 th	“
6	Common keyboard commands	2.52	2.60	2.56	1 st	ACQ
7	Basic hardware terminology	2.54	2.56	2.45	2 nd	NACQ
8	Simple networking diagnosis	1.33	1.40	1.40	4 th	“
9	E-mail	1.33	1.35	1.34	6 th	“
10	Presentation package	1.38	1.36	1.37	5 th	“
	Grand mean X	2.40	2.37			

KEY:

ACQ. = ACQUIRED (MEAN SCORE ABOVE 2.49)

NACQ. = NOT ACQUIRED (MEAN SCORE BELOW 2.50).

Computing/ICT skills acquired by public secondary school teachers who have undergone on-the-job basic computer/ICT literary training programme were assessed using the questionnaire. It was examined in ten areas against teachers in urban and rural areas in Rivers State. The average mean score for the various items range between 2.50 to 2.52 for teachers in the urban and 2.50 to 2.60 for teachers in the rural areas respectively.

Judging from the means scores in specific skill areas, the result showed that items 1, 6 and 7 in the rank order had mean scores above the criterion mean of 2.50

while items 2-4 and 8-10 had mean scores below 2.50. This shows that very few public secondary school teachers in Rivers State were able to acquire basic ICT Skills and common keyboard commands through basic computing/ICT training programmes organized for public secondary school teachers in Rivers State. The rest of the skills identified were not acquired by teachers because their means fell below the criterion mean of 2.50.

Research Question 3: To what extent are secondary schools teachers in Rivers State ICT complaint?

Table 3: Mean (X) and rank order statistics of teachers in the urban and rural areas of the state on the extent to which they are ICT complaint.

S/NO	Assessed Variables	Urban Teachers	Rural Teachers	Mean Set	Rank	Remarks
1.	Secondary schools teachers use ICTs for instructional delivery	1.00	0.20	0.06	10th	LE
2.	Internet facilities are used for instructional delivery?	0.40	0.50	0.45	8th	LE
3.	Secondary school teachers use computers confidently?	1.00	1.00	1.00	5 th	LE
4.	Secondary school teachers are effective in the use of ICTs generally?	1.00	0.40	0.52	6 th	LE
5.	Secondary school teachers can manipulate information using computers/ICTs	1.02	1.00	1.02	4 th	LE
6.	Teachers can identify and scan out computer viruses and malwares	1.00	0.40	0.52	6 th	LE
7.	Secondary school teachers can network using computers?	0.40	0.50	0.07	9th	LE
8.	Most secondary school teachers can't plug-in the computer wire in the right hole and turn it on without asking for help.	2.50	3.00	2.75	3 rd	HE
9.	Most secondary school teachers can't turn-off the computers rightly	3.00	3.00	3.00	1 ST	HE
10.	Most secondary school teachers can't send sms with their phones.	2.66	3.00	2.83	2 nd	HE
	Grand Mean (X)	13.98	12.6	12.22		

SCALE:

- Very High Extent: 3.50 – 4.00
- High Extent: 2.50 – 3.00
- Moderate Extent: 1.50 – 2.00
- Low Extent: 0.50 – 1.00

In table 3, the extent to which public secondary school teachers in Rivers State are ICT compliant were assessed in ten different areas amongst teachers in the urban and rural of the state. The table revealed that most secondary school teachers in Rivers State are not ICT compliant as their mean (X) response fell below the criterion mean of 2.50. More so, items in rank order of 1st to 3rd fell above the criterion mean is in the negative statement indicating teachers non ICT compliant.

Hypothesis 1

There is no significant difference between the mean scores of teachers in Urban and Rural areas on the computing/ICT skills acquired by public secondary school teachers through on-the-job computer/ICT training programmes.

Table 4: z-test of difference between the mean scores and standard deviation of teachers in the urban and rural areas on the computing/ICT skills acquired by teachers through on-the-job computer/ICT training programmes.

Location of Teachers	N	\bar{X}	SD	Df	Z-cal	Z-criti	Level of Significance	Decision
Urban	1800	2.40	1.26	2398	0.44	1.96	0.05	Accepted
Rural	600	2.37	1.34					

A critical look on table 4 shows that the z-calculated value of 0.44 is less than the z-critical value of 1.96 at 0.05 level of significance and degree of freedom of 2398. Hence, the null hypothesis is accepted. Therefore, there is no significant difference between the mean scores of teachers in the urban and rural areas on the computers/ICT skills acquired by teachers through on-the-job computing/ICT training programmes organized for teachers in Rivers state.

Hypothesis 2

There is no significant difference between the mean scores of teachers in Urban and Rural areas on the ICT compliance of secondary school teachers

Table 5: z-test of difference between the mean scores and standard deviation of teachers in the urban and rural areas on the ICT compliance of secondary school teachers.

Location of Teachers	N	\bar{X}	SD	Df	Z-cal	Z-criti	Level of Significance	Decision
Urban	1800	2.46	1.26	2398	0.32	1.96	0.05	Accepted
Rural	600	2.33	1.34					

Hypothesis 2 on table 5 shows that the z-calculated value of 0.32 is less than the z-critical value of 1.96 at 0.05 level of significance and degree of freedom of 2398. Hence, the null hypothesis is accepted. Therefore, there is no significant difference between the mean scores of teachers in the urban and rural areas on the ICT compliance of secondary school teachers in Rivers state.

Discussion

On-the-job Computer/ICT Literacy Programmes organized for Teachers in Public Secondary Schools in Rivers State.

Findings from table 1 revealed that of the five computer/ICT basic literacy training programmes listed, three were organized i.e. basic computer/ICT literacy programmes, 3 month certified train-the-trainer programmes and basic ICT skill courses while two, were not organized. (see chart in figure 1). These indicate that the designed strategy for the implementation and achievement of computer/ICT policy objectives were adhered to a low extent. It implies that the policy is implemented. This finding is contrary to earlier assertion of Jegede and Owolabi (2003) which says that the National Computer policy of 1988 was never implemented based on their investigation that less than 30% of observed teachers in public secondary schools under study have not had any form of in-service training in computer education. That less than 30% of observed teachers in public secondary schools under study have not had any form of in-service training in computer education does not mean that the policy was never implemented.

The study also revealed that of the skill areas investigated, only very few public secondary school teachers in Rivers State were able to acquire basic ICT skills and common keyboard command through the basic computing/ICT training programs organized for them. The study further revealed that most secondary school teachers in Rivers State are not ICT compliance.

Conclusion

It is therefore, concluded that designed strategy for the implementation of information and communication technology policies for teachers in public secondary schools in Rivers State is to a low extent adhered to since on-the-job computer/ICT programmes is organized for public secondary school teachers as required by the policies. Most secondary school teachers in Rivers State were not able to acquire computer/ICT skills and are not ICT compliance even though designed implementation strategy is adhered to.

Recommendations

1. Government should ensure that teachers are regularly trained and retrained on ICTs in order to ensure that Nigeria society is digitally divided.
2. Teachers should embark on self-development instead of waiting for government to organize on-the-job training programme as this will enable them acquire better computing and ICT skills to be able to use the computer to generate and process information and effectively use it for instructional delivery and so become ICT compliance.

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