Principals' Perception of Information and Communication Technology (ICT) Enabled Education in Secondary Schools in Enugu State, Nigeria

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Abstract

The study examined principals' perception of ICT enabled education in public secondary schools in Enugu State. Three research questions and two hypotheses tested at 0.05 level of significance were used. Descriptive survey design was used and data were collected using a checklist, and questionnaire titled "Availability, Awareness and Utilization of ICT Facilities Questionnaire (AAUIFQ)". The instrument was administered to 314 principals, 256 usable copies were returned. Mean and standard deviation were used to collate scores that answered the research questions while t- test was used to test the hypotheses. Findings of the study revealed that most of the listed ICT facilities were not available in public secondary schools in Enugu State, Nigeria. Both the male and female principals had a very low awareness of these facilities. These facilities were also not utilized for teaching and learning. Recommended that ICT facilities should be provided by both government and good spirited individuals and ICT training to be included in teacher education.

Keywords; ICT enabled; education; facilities; perception; availability; awareness; utilization;

1. Introduction

Information and Communication Technologies (ICTs) are equipment used for information gathering, storage, dissemination and retrieval. The united Nations Development Programme (UNDP) defined ICTs in Reddi (n.d) as basic information - handling tools - a varied set of goods, applications and services that are used to produce, store, process, distribute and exchange information. It includes among others computers, projectors, television sets, multimedia, scanner, video, photocopier, web, radio, cell phone, disc player, power point and internet. ICTs are used in virtually all fields of human endeavour.

Its use in education can therefore not be neglected. It is used in education as a tool to aid the gathering and dissemination of knowledge. ICTS provide resources that help improve teaching and students learning outcomes. With the aid of ICTs, students learn to seek information and acquire capabilities in using such information. It has the ability to transform teaching from being teacher dominated to student centered. The potential benefits in education also including - encouraging and motivating students, reaching a large student population and reducing pressure on the few available resources.

ICTs were first implemented in Nigeria in 2001. With its introduction, the vision of the government is to make Nigeria an IT capable country in Africa and a key player in the information society through using IT as an engine for sustainable development and global competitiveness. Some of the objectives of Nigeria's ICT policy with particular inclination to education include:

- To ensure that IT resources are readily available to promote national development.
- To empower the youths with IT skills and prepare them for global competitiveness.
- To integrate ICT into the mainstream of education and training.
- To build a mass pool of ICT literate manpower using the NYSC, NDE, and other plat forms as train the trainer scheme for capacity building. Sadly, however, Agyeman (2007) stated that the Federal Government of Nigeria has no specific policy for ICTin education.

The Federal Ministry of Education created its ICT department in 2007. The National Policy on Education (2014), in stating the philosophy and goals of education in Nigeria, Section 1;4 states that one of the specific goals of education in Nigeria is to;

Promote information and communication technology capability at all levels.

To realize this goal and gain from its contribution to the national economy government shall take necessary measures to ensure that teaching shall be practical, activity based, experimental and IT based.

In the 4 – year strategic plan for the development of the Education sector: 2011-2015, ICT as an educational input was stated to be addressed in order to improve education quality and bring about the desired transformation of Nigeria. The extent to which all these is being done is questionable, as Eberendu (2014) revealed the lack of preparedness by government for the implementation of the IT policy. It is however pertinent to note that government realizes the importance of ICT in today information society.

ICTs are very beneficial in schools, studies by Ajayi and Ekundayo (2009) and Asalu and Fashanu (2012) have revealed benefits of using ICTs in schools to include making teaching – learning interesting, enhancing speed and quality of school work by management, teachers and the students. It is particularly of great benefit to students as it increases their interaction level, reasoning, recall, synthesis and evaluation has improved tremendously (Boit, Menjo and Kimutai

2012). They went further to reveal that it enhanced school discipline and students sense of self esteem and pride significantly.

Despite all the benefits of ICTs in education and schools the actual situation of its usage in schools might not be very encouraging. Emuku and Emuku in Adomi and Kpagban (2010) revealed that ICTs are currently not fully implemented in the Nigerian school system. Its non implementation is due to a number of factors. A major issue in Nigeria is power supply. These facilities need power to function. Unfortunately, lack of power supply is a major challenge to the implementation of ICTs (Ayayi and Ekundayo 2009, and Asalu and Fashanu 2012).

The availability of some of these ICTs is another point to consider. Even when available, the quantity might be very limited that it cannot adequately serve the large student population. Asaolu and Fashanu (2012) stated the relative lack of ICT facilities in public schools as a challenge to its utilization. Several more studies; Olayemi and Omotayo 2012; Adelabu and Adu 2014; and Amuchie 2015, all buttressed the fact that the availability of ICTs in different parts of Nigeria studied was low. Obiadazie and Obijiofor (2016) revealed a non availability of ICT in school in Anambra State. Ezeuwa (2014), however found that ICT facilities were available in Ebonyi State public secondary schools.

The principal is the head of the school, the head teacher. As the school head the translation as well as implementation of education policies rest directly on him. He supervises the teachers to ensure that resources made available by the government are properly utilized. In order to do this effectively, the principal must be aware of these facilities/resources. Regrettably, Olayemi and Omotayo (2012) revealed that the level of awareness of ICTs by secondary school administrators was low.

The few available ICTs have to be used to gain maximally from it. To utilize ICTs facilities, the teachers must have the skills. Several studies in different subjects areas biology, geography and physics as done by Adelabu and Adu (2014); Sofoworu and Egbedokun (2010) and Utibe – Abasi (2013) respectively indicated the lack of ICT skills by teachers in these subject areas. The need to train teachers in ICT skills is very essential to the implementation of ICTs in schools. If teachers lack the skill to operate the limited available ICTs they might not be enthusiastic in utilizing them.

ICTs facilities as found out by Ezeuwa (2014) and Amuchie (2015) are not utilized for teaching. Other studies on the utilization of ICT facilities are not in the affirmative also. Olibie and Ezenwanne (2013) and Utibe - Abasi also revealed the non utilization of the few available ICT facilities in teaching.

2. Statement of the Problem

ICTs facilities are used in virtually all aspects of everyday life. Education should not be left out, since it inculcates knowledge right from infancy. It has become imperative for students to have the knowledge of ICT as there is practically nothing that excludes the use of ICTs.

Moreover, most external examinations are all gradually becoming computer based. In view of all these, the study sought to determine the level of awareness of ICTs among principals, the availabilities as well as the extent of utilization of these in teaching and learning in public secondary schools in Enugu State.

2.1 Purpose of the Study
The purpose of this study is to:
1. Assess the principals' level of awareness of ICT facilities.
2. Ascertain the availability of ICT facilities in public secondary schools in Enugu State.
3. Determine the extent of utilization of these ICT facilities in teaching and learning in public secondary schools in Enugu State.

2.2 Research Questions
1. What is the level of awareness of principals of ICT facilities?
2. Are ICT facilities available in public secondary schools in Enugu State?
3. To what extent are ICT facilities utilized for teaching and learning in public secondary schools in Enugu State.

2.3 Hypotheses
1. There is no significant difference in the mean perception scores of male and female principals on the level of awareness of ICT facilities.
2. There is no significant difference in the mean perception scores of male and female principals on the extent of utilization of ICT facilities in teaching and learning in public secondary schools in Enugu State.

3. Methodology
The descriptive survey design was adopted for this study. Questionnaire tagged "Availability, Awareness and Utilization of ICT Facilities Questionnaire' (AAUIFQ) developed by the researchers was used to collect data. It is made up of two sections A and B. Section A was on school demographics, while section B had a check list of 10 ICT facilities to ascertain their availability as well as items on the awareness and utilization of these ICT facilities. The items were rated on a four point scale. The instrument was validated by two experts in educational management and one in measurement and evaluation, all from the Enugu State University of Science and Technology. The reliability coefficient of the instrument was determined using Cronbach Alpha and a value of 0.73 was obtained indicating a high reliability of the instrument. A trial test of the instrument was done using 30 principals from Anambra State public secondary schools which is outside the target area but has similar characteristic with the study area. All 314 principals in public secondary schools were used. There was no sampling since the population was manageable. After administering and collection of the questionnaires only 256 copies were found usable (%).

Data were analyzed using percentages, mean and standard deviation to answer the research questions. The hypotheses were tested using t – test statistic at .05level of significance.
Results

Table 1: Percentage Availability of ICT facilities

ITEMS	MALE	FEMALE
1. Computers	24%	37%
2. Type writers	46%	53%
3. Radios	35%	43%
4. Projectors	0%	0%

5. Disc players	0%		0%
6. Scanners	1%	0.3%	
7. Cell phones	100%		100%
8. Power point	0%		0%
9. Videos	0%		0%
10. Internet	0%	0%	

Table 2: Mean Responses of male and female principals on the level of awareness of ICT facilities

S/N	ITEMS To what level are you aware of the following ICT facilities computer	Male principal N =96			Female principals N = 160		
		$\overline{X_1}$	SD_1	DEC	$\overline{X_2}$	SD_2	DEC
1	computers	3.08	1.04	HA	3.11	0.92	HA
2	Type writers	2.37	1.21	LA	2.71	1.25	HA
3	Radios	2.74	1.32	HA	3.36	0.93	HA
4	Projectors	2.06	0.94	LA	2.37	1.17	LA
5	Disc players	2.22	1.07	LA	2.26	1.17	LA
6	Scanners	2.08	1.13	LA	1.93	0.89	LA
7	Cell phones	2.91	1.22	HA	3.33	0.93	HA
8	Power point	1.80	0.99	VLA	2.35	1.04	LA
9	Videos	2.10	0.96	LA	2.73	1.06	HA
10	Internet	2.45	0.98	LA	2.89	1.06	HA
	Grand mean	2.38	1.09		2.70	1.04	

Table 2 above reveals grand mean rating of 2.38 and 2.70 for male and female principals respectively.

Table 3 shows that all the items have mean below 2.50 benchmarks. Both male and female principals with grand means of 1.64 and 1.53 respectively. This demonstrates that though there are mean differences, the male and female principals agree that the utilization of ICT facilities for teaching and learning in very low in public secondary schools in Enugu state.

Table 3: Mean Responses of male and female principals on the extent of utilization ICT facilities

S/N	ITEMS To what level are you aware of the following ICT facilities computer	Male principal N =96			Female principals N = 160		
		$\overline{X_1}$	SD_1	DEC	$\overline{X_2}$	SD_2	DEC
1	computers	2.41	1.16	LE	1.91	1.07	VLE
2	Type writers	1.83	1.13	VLE	1.52	0.79	VLE
3	Radios	1.43	0.87	VLE	1.50	0.90	VLE
4	Projectors	1.23	0.64	VLE	1.39	0.78	VLE

5	Disc players		1.23	0.55	VLE	1.28	0.59	VLE
6	Scanners		1.42	0.78	VLE	1.14	0.35	VLE
7	Cell phones		2.37	1.29	LE	1.58	1.02	VLE
8	Power point		1.37	0.86	VLE	1.70	1.02	VLE
9	Videos		1.56	0.83	VLE	1.43	0.86	VLE
10	Internet		1.56	0.96	VLE	1.89	1.14	VLE
	Grand mean		1.64	0.91		1.53	0.85	

$H0_1$

Table 4: t – test of significance difference between the mean rating scores of male and female principals on the level of awareness of ICT facilities

Sex	7	SD	N	Df	Standard Error	t- cal	t–crit	Decision
Male	2.38	1.09	96	254	0.019	2.36	1.96	Reject
Female	2.71	1.04	160					

Result from Table 4 shows that t-cal > t-crit, the null hypothesis was therefore rejected, implying that male and female principals differed in their level of awareness of ICT facilities.

$H0_2$

Table 5: t-test of significant difference between mean rating scores of male and female principals on the extent of utilization of ICT facilities in teaching and learning

Sex	7	SD	N	df	Standard Error	t- cal	t–crit	Decision
Male	1.52	0.91	96	254	0.014	0.083	1.96	Accept
Female	1.53	0.85	160					

The data on Table 5, reveal that t-cal < t-crit, therefore, the null hypothesis is accepted, i.e that both male and female principals agree that the extent of utilization of ICT facilities for teaching and learning in very low in public secondary schools in Enugu state.

4. Discussion of Findings

Most of the listed ICT facilities were not available in most public secondary schools in Enugu State. This tallies with the studies of Asaolu and Fashanu (2012), Adelabu and Adu (2014), Amuchie (2015) and Obiadazie and Obijiofor (2016). This finding is very worrisome bearing in mind the government's vision of making the country a key player in the information society. The male principals unlike their female counter part were not aware of majority of the ICT facilities. This finding is in line with that of Olayemi and Omotayo (2012).

Both male and female principals agreed that the level of utilization of ICT facilities for teaching and learning in public secondary schools in Enugu State was very low. This finding is in agreement with other findings by Ezeuwa (2014) and Amuchie (2015). Other studies by Olibie

and Ezenwanne (2013) and Utibe – Abasi(2013), on the utilization of ICT facilities for teaching and learning are not in the affirmative too. The non utilization could be due to the fact that teachers lack the requisite skill for operating these facilities.

There was no significant difference in the perception of male and female principals in the utilization of ICT facilities for teaching and learning in secondary schools in Enugu State.

5. Conclusion and Recommendations

ICT facilities are not available in majority of the public secondary schools in Enugu State. Many principals are not aware of these facilities. These facilities are not utilized for teaching and learning.

Following the findings of this study, it is recommended that;

1. The government as well as good spirited individuals should provide some of these facilities to schools.

2. Staff development programmes should be organized for teachers to help them acquire the necessary ICT skills.

3. Teacher training institutions should incorporate ICT education in their training programmes.

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