

# Information and Communication Technology (ICT) Availability and Utilization in Management of Secondary Schools in Kaduna State, Nigeria

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## Abstract

The study investigated the availability and utilization of ICT facilities in the management of secondary schools in Kaduna State. The study adopted the descriptive design survey type. A 20 item questionnaire titled Information and Communication Technology Facilities Availability and Utilization Questionnaire (ICTFAUQ) was designed for data collection. 46 respondents out of the 50 principals of the sampled schools completed the questionnaire properly. This amount to 92% return rate. Tables, frequency counts, mean scores and standard deviation were computed to answer the research questions. The independent t – test was used to test the two null hypotheses at 0.05 level of significance. The study revealed that the available ICT facilities in the State were not adequate in schools and their utilization was a matter of concern. The study further revealed that the views of both the Male and Female Principals on ICT facilities availability and utilization in the management of secondary schools did not differ. It was recommended that Government should as matter of urgency sponsor the training of principals on the utilization of ICT facilities in Educational Management and The Federal and State Ministries of Education should ensure the provision of electricity in every school.

**Keywords:-** Information and Communication Technology (ICT), Availability, Utilization, Management, Secondary Schools , Kaduna State and Nigeria

## Introduction

The emergence of information and communication technology (ICT) has totally revolutionalized the way we access, process, store, retrieve and disseminate information within organizations or across the globe. According to Miller and Akume (2009). Information and communication technology refers to the process of gathering accessing and dissemination of data for an enhanced learning Information and communication technology is daily giving rise to new concepts, new ideas and making impact not only in the industries/businesses but also in the education sector. I.C.T. has simplified education through the application of electronics media, internet etc. According to Ndukwe (2006), emphasized that the production and introduction of calculators and computers in the education system worldwide has helped in simplifying teaching and learning in schools, thereby promoting national stability and economic survival. Today, organizations such as educational/research institutions as well as individuals turn to the internet for accurate and up-to date information., sharing of information, working or trading with various people at different places through the internet, is becoming common practice. The use of computer is continually gaining grounds in many aspects of human endeavors. Educational administrators need to have basic information on student and teacher flows, probably also of school supplies, and how much the system is spending on various inputs, in order to make the most basic resource allocation decisions.

Undoubtedly, ICT has played an important role in improving data collection in educational systems. It has also made these data more widely available to school personnel, parents, and the public at large through central administration Web sites, and in some countries through direct access to central databases by school personnels for effective planning and management of schools.

Education management and development according to Naidu and Jasen (2002) is an intricate process that requires reliable, timely, user-friendly and Campbell and Sellbum( 2002) pointed that ICTs can be valuable for storing and analyzing data on education indicators; students' assessments; educational human and material resources; and cost and finance They use of computer related technology is particularly helpful in this educational management Further stressed that school administrators and policy makers can construct different policy options to determine needs and analyze potential consequences. Each scenario can be analyzed and evaluated systematically, not only in terms of educational desirability, but also in terms of financial afford-ability, feasibility and sustainability over a sufficient period of time to show results, perhaps that was why Ibukun (2003) cautioned that there is no amount of capital injection into Educational System without a change of altitude, better skill acquisition and overt commitment on the part of the teaching force that can produce the much-desired change in school performance. It is not an exaggeration that ICTs have significant contributions to changes in teaching practices, school change and innovations, and community services. Thus, policy makers and school administrators should think in terms of input factors that can work together to observe the right influence of ICT in education.. Kozma (2005) opined that matching the introduction of computers with national policies and programs related to changes in curriculum, pedagogy, assessment, and teacher training is more likely to result in greater learning of students and other outcomes. Ohakwe and Okwuanaso (2006) contented that the knowledge of computer application software's such as spreadsheet, excel, computer – aided design, and database are important skills in schools management. The complexity of secondary school education requires more demand from school administrators in processing of relevant data in an attempt to provide information for the State Teachers Board and other educational agencies for decision making towards quality assurance and transformational development

### **Statement of the problem**

Information and communication technologies are already a vital factor in successful development of education. Recently the Federal Government contended that computer knowledge would be a requirement for some employments, interviews and in some cases promotions.. It seems as if ICT facilities might not have been effectively used in the management of schools as it appears some vital areas of application still not attended to in secondary schools in Kaduna State. It is on these bases that the study tends to empirically investigate the availability and utilization of ICT facilities in the management of secondary schools in Kaduna State.

### **Research Questions**

For the purpose of carrying this study, two research questions were formulated to guide the study.

- 1) What is the state of ICT facilities availability for the management of secondary schools in Kaduna State, Nigeria?
- 2) What is the level of ICT facilities utilization in the management of secondary schools in Kaduna State, Nigeria?

## Research Hypotheses

The following hypotheses were formulated to guide the study.

- H<sub>01</sub>:** There is no significant difference in the mean responses of male and female principals on ICT facilities availability in the management of secondary schools in Kaduna State.
- H<sub>02</sub>:** There is no significant difference in the mean responses of male and female principals on ICT facilities utilization in the management secondary schools in Kaduna State.

## Purpose of the Study

The purpose of this study was to investigate into ICT availability and utilization in the management of secondary schools in Kaduna State. Specifically, the study sought to:-

- Establish ICT facilities availability to principals in secondary schools in Kaduna State.
- Establish whether ICT facilities are utilized in the management of secondary schools in Kaduna State

## Significance of the Study

The study is significant in many ways. The study would provide empirical information on the level of a ICT facilities availability to principals in secondary schools in Kaduna State and provide information on the level of usage of ICT facilities by principals in the management of secondary schools in the State. The study would have implications for teacher educators in Colleges of Education and Universities in incorporating ICT assisted courses in Teacher Education Programme.

## Research Design

The study adopted the descriptive survey design.

## Population

The population of this study comprises of all secondary schools in Kaduna State.

## Sample and Sampling Procedure

50 secondary schools were selected by stratified random sampling from all the 118 Senior Secondary Schools located in the state. The principals in the 50 schools were the sample used for this study.

## Instrument for Data Collection

A 20 item questionnaire titled Information and Communication Technology Facilities Availability and Utilization Questionnaire (ICTFUAQ) was designed for data collection for the study. Respondents were asked to rate each of the items on 4 point likert scale as follows: Strongly Agree (SA – 4 points), Agree (A – 3 points), Disagree (D – 2 points), and Strongly Disagree (SD – 1 point) were used.

### **Validity of Instrument**

The instruments were given to two specialists in Educational Management for validation with regard to terminology that was used to measure the intent of the study. Their corrections were used in the reconstruction of the instrument.

### **Reliability of the Instrument**

To ensure the reliability of the instrument, a test-re-test technique was employed. A pilot study was carried out by administering the ICTFUAQ instrument at intervals of two weeks on 10 non participating Secondary School Principals in Sabon – Gari Local Government Area of the State. The reliability index was calculated using the person product moment correlation. A correlation coefficient index of 0.98 was obtained.

### **Data Collection**

After selecting a school for participation in the study, a letter was sent to the principals through their respective Zonal Education Officers with explanation on the nature and importance of the research. The ICTFUAQ was included in a packet that was mailed to the schools. The completed questionnaires were collected personally while others were collected through their respective Zonal Educational Officers. 46 respondents comprising out the 50 principals of the sampled schools completed the questionnaire properly. This amount to 92% return rate. 35 of the respondents were males while 21 were females.

### **Data Analysis**

The statistical techniques for the data collected varied in accordance with the nature of research questions and hypotheses. Tables, frequency counts, mean scores and standard deviation were computed to answer the research questions1 and 2. The mean of 2.5 was regarded as "Reject" while a mean response on or above 2.5 were regarded as "Accept".By using The Statistical Package for the Social Sciences (SPSS). The independent t – test was used to test hypothesis1 and 2. The two null hypotheses were tested at 0.05 level of significance.

### **Results**

#### **Research Question 1**

What is the state of ICT facilities availability to principals for the management of secondary schools in Kaduna State?

The result generated from the study is presented in table 1.

**Table 1:** Means and Standard Deviation Scores of views of Principals on ICT Facilities Availability in Management of Secondary Schools in Kaduna State.

S/N	ICT Facilities	Mean	SD	Decision
1	Internet	1.34	0.439	Rejected
2	Multimedia Projector	1.86	0.431	Rejected
3	e-mail	1.22	0.342	Rejected
4	Interactive Radio	1.22	0.342	Rejected
5	Teleconferencing	1.35	0.448	Rejected
6	Audio Tapes	1.87	0.432	Rejected
7	Computers	1.22	0.342	Rejected
8	Photocopiers	1.15	0.230	Rejected
9	Handset	1.85	0.849	Rejected
10	Printer	1.89	0.431	Rejected

Table 1, shows that all the respondents disagreed on the ICT facilities availability in the management of secondary schools Kaduna State. All the 10 items had mean scores below the cut-off point of 2.5. Point on a four-point likert scale.

### Research Question 2

What is the level of ICT facilities utilization in the management Secondary schools in Kaduna State? The result generated from the study is presented in table 2

**Table 2:** Means and Standard Deviation Scores of views of Principals on ICT Facilities Utilization in Management of Secondary Schools in Kaduna State.

S/N	ICT Facilities	Mean	SD	Remarks
11	Internet	1.34	0.439	Rejected
12	Multimedia Projector	1.86	0.431	Rejected
13	e-mail	1.22	0.342	Rejected
14	Interactive Radio	1.22	0.342	Rejected
15	Teleconferencing	1.35	0.448	Rejected
16	Audio Tapes	1.87	0.432	Rejected
17	Computers	1.22	0.342	Rejected
18	Photocopiers	1.15	0.230	Rejected
19	Handset	1.85	0.849	Rejected
20	Printer	1.89	0.431	Rejected

Table 2 shows that all the respondents disagreed on the ICT facilities utilization in the management of secondary schools Kaduna State. All the 10 items had mean scores below the cut-off point of 2.5. Point on a four-point likert scale

**Hypotheses Testing**

**Ho<sub>1</sub>:** There is no significant difference in the mean responses of male and female principals on ICT facilities availability in the management of secondary schools in Kaduna State.

The hypothesis was tested using t – test. The result is shown in table 3.

**Table 3:** *t – test of Difference in the Mean Responses of Male and Female Principals on ICT Facilities Availability in the Management of Secondary Schools in Kaduna State.*

ICT Facilities Availability	Principals	N	Mean	S.D	S.E	DF	t Calculated	t Critical	Decision
	Male	35	3.10	0.76	0.220	44	1.091	2.021	NS
	Female	21	2.86	0.82					

P < 0.05

Table 3 shows that the calculated t-test value of 1.091 is less than the criterion value of 2.021 at 0.05 level of significance to accept the null hypothesis of significant difference..This implies that the views of both the male and female principals on ICT facilities availability in the management of secondary schools Kaduna State did not differ.

**Ho<sub>2</sub>:** There is no significant difference in the mean responses of male and female principals on ICT facilities utilization in the management secondary schools in Kaduna State.

The hypothesis was tested using t – test. The result is shown in table 4

**Table 4:** *t – test of Difference in the Mean Responses of Male and Female Principals on ICT Facilities Utilization in the Management of Secondary Schools in Kaduna State.*

ICT Facilities Utilization	Principals	N	Mean	S.D	S.E	DF	t Calculated	t Critical	Decision
	Male	35	3.11	0.78	0.219	44	1.918	2.021	NS
	Female	21	2.69	0.80					

P < 0.05

Table 4 also shows that the calculated value of 1.918 is less than the criterion value of 2.021 at 0.05 level of significance to accept the null hypothesis of no significant difference. This is, the views of both male and female principals on ICT facilities utilization in the management of secondary schools in Kaduna State not differ.

**Discussion**

The analysis of research question one (Table 1) indicated that all the respondents disagreed on the ICT facilities availability in the management of secondary schools Kaduna State. All the 10 items had mean scores below the cut-off point of 2.5. Point on a four-point likert scale. Table 2 further revealed that all the respondents disagreed on the ICT facilities utilization in the management of secondary schools Kaduna State. All the 10 items had mean scores below the cut-off point of 2.5. Point on a four-point likert scale. The findings are not surprising because there could not be

utilization without availability. It is therefore, obvious that lack of these core ICT facilities would make principals ineffective in achieving the laudable goals secondary education in Kaduna State.

The findings of this study revealed that that the views of both the male and female principals on ICT facilities availability and Utilization in the management of secondary schools Kaduna State did not differ. Table 3 shows that the calculated t-test value of 1.091 is less than the criterion figure of 0.021 at 0.05 level of significance to accept the null hypothesis of significant difference.in the t – test of difference in the Mean Responses of Male and Female Principals on ICT Facilities Availability in the Management of Secondary Schools in Kaduna State.and Table 4 also shows that the calculated value of 1.918 is less than the criterion figure of 2.021 at 0.05 level of significance to accept the null hypothesis of no significant difference in the the t – test of difference in the Mean Responses of Male and Female Principals on ICT Facilities Availability in the Management of Secondary Schools in the State. These findings agreed with Ibukun (2003) who affirmed that there is no amount of capital injection into Educational System without a change of altitude, better skill acquisition and overt commitment on the part of the teaching force that can produce the much-desired change in school performance and no wonder Ohakwe and Okwuanaso (2006) contented that the knowledge of computer application software’s such as spreadsheet, excel, computer – aided design, and database are important skills in schools management.

## **Conclusion**

The study revealed that the available ICT facilities in the State were not adequate in schools and their utilization was a matter of concern. The study further revealed that the views of both the Male and Female Principals on ICT facilities availability and Utilization in the management of secondary schools did not differ .Based on the aforementioned findings, it is therefore imperative to conclude that the provision of ICT facilities and proper utilization of information and communication technology in the management of secondary schools would bring teachers and educational administrators into the information age with computer training and with more teacher-oriented, easily accessible data bases that help teachers in their teaching.

## **Recommendations**

Based on the results and findings of the study, the following recommendations would go along way to solve the problems of ICT availability and utilization in the management of secondary schools in the state.

1. Government should also sponsor the re-training of principals on the utilization of ICT in Educational Management.
2. Serving teachers should be given the opportunity within a specific period to become ICT in education literate through in service education.
3. Government should ensure the provision of basic ICT facilities in all schools.
4. School principals should involve the parent-teacher associations in the provision of ICT facilities in schools.
5. The Federal and State Ministries of Education should ensure the provision of electricity in every school.

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