

Personnel and Finance Related Constraints Facing the Application of Information and Communication Technology (ICT) in the Administration of Secondary Schools in Rivers East Senatorial District

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Abstract

The application of Information and Communication Technology is becoming more widespread in almost all sectors of human endeavors, including education. In schools, ICT is applied in teaching and learning, and in school administration. The school administrators now use ICT to achieve administrative effectiveness and efficiency in their mandatory functions, such as planning, organizing, directing and coordinating. It is on these bases that most schools administrators task themselves to acquire, utilize and maintain ICT facilities in their schools. However, a pilot investigation conducted by these researchers has shown that these facilities, in the majority of the schools were either in short supply or inappropriate. In addition, the study pointed at personnel and finance variables as their major constraints to the application of ICT in schools. The question now is to what extent are these constraints? This study is an attempt to investigate the personnel and financial constraints facing ICT application in the administration of secondary schools in Secondary schools in Rivers State. The study adopted an opinion survey to obtain, through a simple random sampling technique, a sample of 246, out of a population of 636 public secondary school principals in Rivers Senatorial District in Rivers State, Nigeria To this effect, information collected using a validated and reliably certified questionnaire were sought from the respondents via email. To answer the research questions, data gathered were collated, and analyzed using mean and standard deviation, while the hypotheses were tested using t-test and Chi-Square (χ^2) statistics. Some useful recommendations were proffered.

Keywords: *Personnel constraints, finance constraints, information and communication technology, secondary school administration, rivers east senatorial district.*

Introduction:

The use of Information and Communication Technology (ICT) is becoming progressively more widespread throughout various sectors of human endeavors, including education. ICT in teaching and learning is rapidly becoming one of the most important and widely discussed in contemporary education policy (Ugwoke, Onu, Agangan & Ugwuanyi, 2015). ICT has the opportunity to revolutionize pedagogical methods, expands access to quality education and improve the management of educational systems. It has become a global common tool that has tremendously influenced development of all facets of human endeavor. There is no doubt that schools in the Rivers East Senatorial District are also influenced by this trend. The district has the following Local Government Areas: Emohua, Etche, Ikwerre, Obio-Akpor, Ogu-Bolo, Okrika, Omuma and Port Harcourt.

ICT has made a very profound and remarkable impact on the quality and quantity of teaching, learning and research in educational institutions. It has the potential to accelerate, enhance and deepen skills, to motivate and engage students in learning to help relate school experiences to work practices. The administration of secondary schools rests on the shoulders of the principals who are leaders, controllers and custodians of all academic and extracurricular activities in the school for effective teacher's service delivery geared towards changing the behavioral pattern of the learners and other workers in the school.

Secondary education is the education where children receive their post primary education. It lies between the primary and the tertiary stage. The broad goals of secondary education is to prepare the individual for useful living within the society and for higher education. Secondary education is of six years duration, given in two stages: junior and senior secondary stages; each of which maintains three year duration (Federal Republic of Nigeria, 2014:18).

The achievement of secondary school goals is dependent on the extent the secondary school principal is capable of applying the appropriate administrative processes in the school operations. The principal who is the administrator does not work in isolation; rather in constant interaction with the Ministry of Education, School Management Board, teachers, students and other stakeholders. The school is an open system that is in constant interaction with the environment. It receives inputs from the external environment in the form of human and material resources. There are developments in the Nigerian education sector which include the task for the application of ICT in the secondary schools. The Federal Government of Nigeria, in the National Policy on Education (Federal Republic of Nigeria, 2014), recognizes the prominent role of ICT in the modern world, and has integrated ICTs into education in Nigeria. To actualize this lofty goal, the document states that Government will provide basic infrastructure and training at the primary school. At the junior secondary school, computer education has been made a pre-vocational elective, and is a vocational elective at the senior secondary school. It is also the intention of the Government to provide necessary infrastructure and training for the integration of ICT in the secondary school system. It should be noted that 2004 was not the first attempt the Nigerian Government attempted to introduce Computer Education in schools. In 1988, the Nigerian government enacted a policy on Computer Education. The plan was to establish pilot schools and diffuse computer education innovation first to all secondary schools, and then to primary schools. Unfortunately, the project did not really take off beyond the distribution and installation of personal computers (Okebukola, 1997 & Iyamu, 2005). They concluded that the computer is not part of classroom technology in more than 90 percent of Nigerian public schools. This implies that the chalkboard and textbook will continue to dominate classroom activities in most Nigerian secondary schools. The principal being an instructional leader, motivator, coordinator, adviser, planner, supervisor, and so on is expected to be the driving force for effective curriculum delivery. The principal must device appropriate measures and techniques to ensure that the teachers comply with the laid down rules and regulations in the performance of instructional tasks. It is equally important to note that principals should collaborate with relevant stakeholders to promote capacity development of teachers, through intensive and regular seminar, use of ICT in schools, workshops to improve the knowledge, pedagogical skills and competence of teachers in various subjects. Uyanga (2008), admits that the principal being at the Centre of change agenda in educational system, is expected to deploy administrative techniques in adapting to the change process such as the use of ICT and effecting it in the school system. The principals are therefore faced with the responsibilities of bringing together all individuals that will help to control, co-ordinate and articulate activities to achieve holistic learning activities in the school system.

The role of the principal cannot be underrated for proper and effective use of ICT in the teaching and learning process, in as much as the teacher has a role to play in the curriculum implementation. So the ability, skill, knowledge, resourcefulness and competence of the teacher are of great importance. Barkar (2006) revealed that there is insufficient courses and training, the teachers are not adequately trained, poor support from administration, negative attitude from teachers and lack of technical support skills from the laboratory technician are the reasons for poor integration of ICT in education. Obinwa (2015) opined that for any teacher at any level to be able to contribute to national development in this global world, he/she must be empowered to provide ICT based training for the students. Thus, his/her education must include opportunities to acquire skills in the selection, application and use of ICT tools and materials for instructional activities. In secondary schools, there is lack of qualified personnel to manage available systems, develop and use information communication technology facilities for the teaching-learning process. However, in schools where these personnel exist, they lack skills in designing and delivering subject contents in electronic formats (Osakwe, 2012). According to Gbadamosi (2006), “inadequate funding is a major challenge because it has negatively affected many areas of education in Nigeria”.

Evoh (2007) observes that despite the recognized role of ICTs in improving education, ICTs remain a low financial priority in most educational systems in Africa. He further observes that most countries in the region lack resources for a sustainable integration of ICTs in education, and that African countries face numerous competing development priorities. The researcher’s informal interactions with some of the principals of schools that received these computers revealed that the computers supplied were not used because of inadequate infrastructures such as cost of ICT facilities, electricity, buildings, space, leaking roofs and broken doors and windows in the places where they could be kept. Some other principals blamed inadequate security to prevent burglary of the computers, lack of staff competencies on computer usage and inadequate technical support for their installation and repairs. Mingaine (2013) assert that the factors that affect ICT utilization in schools include the availability of electricity and cost of ICT infrastructure.

The cost of computers is too high for many to afford. Monthly Internet subscriptions are exorbitant and the charges for satellite television are unaffordable for most people in Africa (Brakel & Chiseuga, 2003). This has made it difficult for Nigerian secondary schools to acquire and install ICT facilities for the use of teachers and students. Okwudishu (2005) pointed out the high cost of ICT equipment as a challenge to the availability and accessibility of the materials. They also noted that the problems might not be the funds nor the technology but rather the will on the part of the government to include it in the budget for education, in the country or state. It is also noted that epileptic nature of electric power supply in most parts of the country and also inadequate telephone networks impede the use of ICT, even if they are provided. Adedeji (2011) suggested that governments should invest in provision of ICT resources to schools for training because the findings of his research revealed that most ICTs available in schools were being utilized for administrative purposes. Ugwoke, Onu, Agangan and Ugwuanyi (2015) asserts that financial-related constraints include poor government policies in implementation of ICT in schools; negligence of government in implementation of policies on the provision of ICT in schools; poor funding on procurement of ICT facilities by the government; changes in government policies; and cost of ICT facilities. All these were found to be hindering principals’ utilization of ICT in secondary schools. This is in line with Aduwa-Ogiegbenam and Iyamu’s (2005) findings that the high cost of computer hardware and software is one of the major setbacks to the adoption of ICT in secondary schools in Nigeria. These observations status reports of factors affecting the applications of ICT in schools in other

school districts. The question then is what are personnel and financial constraining the application of ICT in schools in Rivers East Senatorial District. It is on this basis that this study is directed to investigate the personnel and financial constraints facing application of information and communication technology in the administration of secondary school in Rivers East Senatorial District.

Research Questions

The following research questions will guide the study:

1. What are personnel-related constraints facing the application of ICT in the administration of secondary schools in Rivers East Senatorial District?
2. What are the finance related constraints in the application of ICT in the administration of secondary schools in Rivers East Senatorial District?

Hypotheses

The following hypotheses are formulated and will be tested at 0.05 level of significance:

1. There is no significant difference in response among the respondents on personnel-related constraints facing the application of ICT in the administration of secondary school in Rivers East Senatorial District.
2. There is no significant difference in response among the respondents on financially-related constraints in the application of ICT in the administration of secondary schools in Rivers East

Methodology

The design for the study is a descriptive survey. The population of the study comprised of 636 public secondary school principals in Rivers East Senatorial District of Rivers State, Nigeria in 2019/2020 session. The sample size was 246 principals, which represented 39% of the target population. The sample was drawn through simple random sampling technique.

The instrument for data collection is a 4-point Likert scale format with item rated in ordinal scale as: Very High Extent (VHE) 4 - points, High Extent (HE) 3 - points, Low Extent (LE) 2 - points and Very Low Extent (VLE) 1 - point. The instrument was validated by experts from the ICT Centre, and Department of Educational Foundations, Rivers State University. The quality of the draft copies of the questionnaire was improved by the inputs provided by these validators. The reliability of the instrument was guaranteed by the high index of 79.32 using Pearson's Product Moment Correlation statistics with the test re-test administration to obtain two parallel sets of scores.

Data were collected from the principals (respondents) by sending the questionnaire through their email addresses and their responses were collated and computed using mean and standard deviation to answer the research questions, while the hypotheses were tested using t-test and chi-square (χ^2) at 5% level of significance.

Results and Analysis

Research Question 1: What are personnel-related constraints facing the application of ICT in the administration of secondary schools Rivers East Senatorial District?

Table 1: Frequencies percentage, mean standard deviation of administrator response personnel related constraint on ICT application in administration of secondary school.

N/S	Personnel-Related Constraints	VHE (%)	HE (%)	LE (%)	VLE (%)	TS	\bar{x}	SD	Remark
1	Principals have inadequate storage facilities for application of ICT in schools	67 (27.2)	14 (5.7)	101 (41.1)	64 (26.0)	576	2.34	1.138	LE
2	Inadequate ICT skills amongst principal are constraints to application of ICT in schools	44 (17.9)	35 (14.2)	45 (18.3)	122 (49.6)	493	2.00	1.166	LE
3	Principals have poor security for safe keeping of ICT facilities in the schools	65 (26.4)	102 (41.5)	7 (2.8)	72 (29.3)	652	2.65	1.160	HE
4	Principals inadequate power supply for application of ICT in schools	65 (26.4)	65 (26.4)	88 (35.8)	28 (11.4)	659	2.68	0.989	HE
5	Lack of technical support from government or other agencies for ICT installation is a constraints to principal's application of ICT in schools	94 (38.2)	21 (8.5)	73 (29.7)	58 (23.6)	643	2.61	1.716	HE
6	Lack of maintenance and repairs of ICT facilities is a constraints to principal's application of ICT in schools	102 (41.5)	35 (14.2)	66 (26.8)	43 (17.5)	688	2.80	1.160	HE
7	Poor internet service in the school is a constraint to principal's application of ICT in schools	101 (41.1)	36 (14.6)	50 (20.3)	59 (24.0)	671	2.73	1.227	HE
8	Principals use ICT medium to communicate with parents	59 (24.0)	57 (23.2)	37 (15.0)	93 (37.8)	246	1.20		LE
9	Fear of using ICT facilities	14 (5.7)	72 (29.3)	67 (27.2)	93 (37.8)	499	2.03	0.949	LE
10	Lack of training in the use of ICT	56 (22.8)	23 (9.3)	59 (24.0)	108 (43.9)	519	2.11	1.199	LE
11	Insufficient ICT facilities for application	73 (29.7)	72 (29.3)	29 (11.8)	72 (29.3)	638	2.59	1.194	HE
	Pooled Mean (\bar{x})						2.44		LE

$N = 246$

Result in table 4.3 revealed that items 1, 8, 9, 10 are in low extent as personnel related constraint facing ICT application. The rest 6 items fall under the range of high extent. However, the overall mean of 2.44 fall within the range for low extent. Therefore, personnel is a constraint to the application of ICT in the administration of secondary school in Rivers East Senatorial District is to a low extent. This shows that most of the respondents agreed that personnel are constraint in the application of ICT facilities in the administration of secondary school in Rivers East Senatorial District.

Research Question 2: What are the financially related constraints in the application of ICT in the administration of secondary schools in Rivers East Senatorial District?

Table 2: Frequencies percentage, mean and standard deviation of administrator response on Financial related constraint on ICT application in administration of secondary school.

S/N	Financial-Related Constraints	SA (%)	A (%)	D (%)	SD (%)	TS	\bar{x}	SD	Remark
1	Poor government policies in implementation of ICT in schools hinder principal's application of ICT in schools	188 (76.4)	36 (14.6)	22 (8.9)	0 (0)	904	3.67	0.632	SA
2	Negligence by government in implementation of policies on the provision of ICT in schools is a constraint to application of ICT in schools	116 (47.2)	94 (38.2)	22 (8.5)	15 (6.1)	803	3.26	0.857	A
3	Poor funding on procurement of ICT facilities by the government is a constraint to principal's application of ICT in schools	203 (82.5)	22 (8.9)	14 (5.7)	7 (2.8)	913	3.71	0.701	SA
4	Changes in government policies is a constraint to principal's application of ICT in schools	181 (73.6)	44 (17.9)	21 (8.5)	0 (0)	898	3.65	0.632	SA
5	Cost of ICT facilities is a constraint to principal's application of ICT in schools	143 (58.1)	37 (15.0)	29 (11.8)	37 (15.0)	778	3.16	1.131	A
6	Lack of funds to procure ICT facilities	123 (50.0)	93 (37.8)	7 (2.8)	23 (9.3)	808	3.28	0.908	SA
7	Lack of conference in the national ICT policy	106 (43.1)	110 (44.7)	30 (12.2)	0 (0)	814	3.31	0.678	SA
8	Resistance to change	28 (11.4)	44 (17.9)	74 (30.1)	100 (40.7)	492	2.00	1.022	D
9	Poor maintenance of ICT facilities	79 (32.1)	108 (43.9)	51 (20.1)	8 (3.3)	750	3.05	0.812	A
Pooled Mean (\bar{x})							3.23		A

$N = 246$

Table 2 revealed that only item 8 is disagree, items 5 and 9 the respondent agrees with it as financial constraint while item 1, 3, 4, 6, 7 the respondent strongly agree that there are financial related constraints. The overall mean of (3.2) indicates that all are financial related constraint facing ICT application in administration of secondary schools in Rivers East senatorial district. This shows that most of the respondents agreed that finance is constraint in the application of ICT facilities in the administration of secondary schools.

Hypothesis 1: There is no significant difference in response among the respondents on personnel-related constraints facing the application of ICT in the administration of secondary school in Rivers East Senatorial District

Table 3: Chi square analysis of administrator response personnel related constrain on ICT application in administration of secondary school.

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	486.70 ^a	30	.000
Likelihood Ratio	526.853	30	.000
Linear-by-Linear Association	.927	1	.336
No of Valid Cases	2706		

Table 3 shows chisquare X^2 analysis shows that $X^2 = 848.156$ df 24 sig 0.000 the null hypothesis is which states that there is significant difference in response among respondents on financially related constraints in the application of ICT in the administration of secondary schools in Rivers East senatorial district is rejected.

Hypothesis 2: There is significant difference in response among respondent on financially related constraints in the application of ICT in the administration of secondary school in Rivers East Senatorial distric

Table 4: Chi square analysis of response on Financial related constraints on ICT application in the administration of secondary school

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	848.156 ^a	24	.000
Likelihood Ratio	796.611	24	.000
Linear-by-Linear Association	242.660	1	.000
No of Valid Cases	2215		

The Chi square analysis shows that $X^2 = 848.156$ df 24 sig 0.000 the null hypothesis is which states that there is significant difference in response among respondents on financially related constraints in the application of ICT in the administration of secondary schools in Rivers East senatorial district is rejected. This implies that there is significant difference in response among respondents on financially related constraint.

Discussion

Results from table 3 shows that there is significant difference in response among the respondent on personnel-related constraint facing the application of ICT in the administration of secondary schools in Rivers East Senatorial district. The findings of the study reveals all the item in table 1 has a mean range of 2.0 – 2.80 and the overall mean is 2.44. The overall mean for personnel related constraint facing ICT application in administration of secondary schools in Rivers East Senatorial district is to a low extent. The principal who is the administrator in the secondary school must be abreast with the knowledge of ICT. According Obinwa (2015) the teacher at any level to be able to contribute to national development in this global world he/she must be empowered with ICT based training. The administrator must have opportunity to acquire skill in the selection and use of ICT tools and materials for instructional exercise. However, the result of this is in agreement with Osakwe (2012) who asserts that these personnel lack skills in designing and delivering of subject content in electronic format. In the same vein Iperen (2016) found out that no school manager uses the internet to download information for management task. Similarly, Hepp, Hinostraza Laval and Rehbein (2014) found out that lack of exposure and expertise on the part of the teacher (administrators inclusive) who are computer illiterate who are made to manage modern student who are quick to self-educate and highly computer literate. Furthermore, the forcing of teachers to use technology in the school without giving them ample time to learn, acquire and apply the technology appropriately. The administrators fail to use ICT facilities due to lack of confidence amongst them which is attributed to lack of professional training. From the result of the finding constraint should inadequate storage facility, lack ICT skill, poor security, power supply, lack of technical, lack of training and fear are among the personnel related constraint. These are in agreement with

what Afshari, Barker Luan, Samah and Fooi (2009) called manipulative and non-manipulative factors. The findings of Okon, Ekaette and Ameh (2015) is in agreement with this study that there is significant relationship between ICT usage for record keeping and principal administrative effectiveness. Similarly, Nwosu in Astne (2014) asserted that the use of ICT facilities for record keeping assisted the school administrator to meet school management tasks in the area of administration, curriculum instruction school-community relation, school-government relationship and generally school business. Anuma (2011) also noted that with the use of computer administrators could store up many files in it memory and retrieve it when needed for effective administration of secondary school.

The finding of the study as shown in table 2 revealed that the respondents affirmed that 8 out of 9 items were financially related constraint. The overall mean of 3.23 shows that all the respondent sees finance as a constraint to the administration of secondary school the results shows that there is significant difference among the respondent on financially-related constraints in the application of ICT in the administration of secondary school in Rivers east senatorial district. The significant result is because the Bible stated that “money answers all things” Ecc 10:19. The amount of fund released to the project determines the effectiveness of the project. The result of the study agrees with Evoh (2007) observes that despite the recognized role of ICTs in improving education, ICTs remain a low financial priority in most educational system in Africa. Furthermore, he observed that most countries in the region lack resources for a sustainable integration of ICT in education.

The researcher further interacted with the principals of some school that received computer the principal complain that why the computer is not in use is because of inadequate infrastructure such as cost of ICT facilities, electricity and building space, leakage of roof and broken doors and windows in the spaces where they could be kept.

Similarly, Magaine (2013) revealed the factors that affect ICT application in schools include the non-availability of electricity and cost of ICT infrastructures. In the same vein Agangan and Ugwanyi 2015 assert financial-related constraints include poor government policies in the implementation of ICT in schools; negligence of government in the implementation of policies on the provision of ICT in schools poor funding on procurement of ICT facilities by government, changes in government policies and cost of ICT facilities. All these were found to be hindering principal application of ICT in secondary schools. Odeh (2011) disclosed government are not interested in funding ICT for the management performance, the little funds they have they procure such as ICT items like computer, radio, photocopy machine and printing machines which are very useful for daily administrative performance. Sibanck, Meperdika and Furusa (2016) found out that lack of power supply insufficient resources, higher cost and poor infrastructures are factors hindering ICT utilization in secondary school. The result of the study is in agreement with Aduwa-Ogiegbenam and Iyamu (2005) that the high cost of computer hardware and software is one of the major setback to the adoption of ICT. In the administration of secondary schools in Nigeria attitude towards ICT.

Conclusion

This research studied personnel and finance as constraints facing application of ICT facilities in the administration of secondary schools in Rivers East Senatorial District. This situation in secondary schools does not promote effective and productive use of ICT facilities in the administration of secondary schools in Rivers East Senatorial District. Finance and personnel related constraint are the major challenge facing the availability and application of ICT facilities in the administration of secondary schools in Rivers East Senatorial District.

Recommendations

Based on the findings of the study, the following recommendations were made:

1. Adequate computer and internet centers and cyber café should be made available by Federal and State governments to secondary schools in order to provide accessibility for the use of ICT facilities in, teaching, learning and administrative purposes.
2. State governments should try as much as possible to give more support for acquisition and utilization of ICT facilities so as to enhance effective and productive secondary school's administration.

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