African Research Review: An International Multidisciplinary Journal, Ethiopia
AFRREV Vol. 14 (1), Serial No 57, January, 2020: 61-71
ISSN 1994-9057 (Print) ISSN 2070-0083 (Online)
DOI: http://dx.doi.org/10.4314/afrrev.v14i1.6

Status of Principals' ICT Usage in Secondary School Administration in Rivers State

Abraham, Lois Nkechi
Department of Curriculum Studies and Educational Technology
Faculty of Education
University of Port Harcourt, Port Harcourt
Rivers State, Nigeria
E-mail: lois.abraham@uniport.edu.ng

Bariyaa, John
Department of Educational Management
Faculty of Education
Ignatius Ajuru University of Education, Rumuolumeni
Port Harcourt, Nigeria

Abstract

This study examined the status of principals' ICT usage in secondary school administration in Rivers State. The study adopted a descriptive research design. The population of the study was 276 Principals from the 276 Senior Secondary Schools in Rivers State. A sample size of 138 was drawn using simple random sampling techniques. This represented 50% of the total population. Five research questions and five hypotheses guided the study. A self-designed questionnaire tagged "Principals' Information and Communication Technology Usage Questionnaire (PICTUQ)", which was a modified 2 points rating scale of YES =2 points and NO= 1 point. The data were analyzed using Mean and Standard Deviation. The criterion mean of 1.50 was used as benchmark for taking decision of each of the items of the research questions. Any score up to 1.50 and above was accepted; while score below 1.50 was rejected as not having desired impact. The z-test was used to test the hypotheses. The findings of the study revealed that both the rural and urban principals upheld the fact that there is no computer laboratory, computers, scanners, projector and power generating plants in public secondary schools in Rivers State. The study recommended that: ICT facilities should be

installed in all secondary schools in Rivers State; adequate number of experts should be employed to train principals and students in ICT; adequate funds should be provided to manage the process for adequate educational quality service delivery in schools; government should set committee to install and monitor ICT facilities and its usage in public schools in Rivers State.

Key Words: ICT, Administration, ICT access, ICT application, ICT literacy, Principals' performance.

Introduction

The need to become visible, accessible and relevant to the world has made educational managers to embrace and incorporate Information and Communication Technology (ICT) in secondary school administration. This is with the aim of improving principals' administrative performance with its attendant productivity. Abraham and Chuku (2018) averred that ICT is a system derived from the intermingling of Information Technology (IT) and Communication Technology (CT). It could also be defined as the application of electronic media (Computers, telecommunication gadgets, digital media, mobile devices, Personal Digital Assistants (PDAs) etc. in the acquisition, processing, storage, retrieving, and dissemination of Information. Nwaoma in Kalu, Mmereole and Osuocha (2017) opined that ICT, a terminology for information and communication system is a generic term referring to technology which is used for collecting, storing, editing and passing on of information in various forms.

Information and Communication Technology in the educational parlance refers to the technology that is manipulated using electronic devices to transmit data, graphics, symbols, sounds, videos, messages and pictures to achieve specific and broad educational goals. Educational stakeholders – society, government, organizations and parents are interested in getting viable information about pupils' performance. This expectation informed the need for appropriate technological platform to adequately communicate, interact or interface with the students and transmit their progress or challenges to the stakeholders even at the comfort of homes and offices. This problem is not peculiar to Rivers state alone. In the same vein, Eguwunyenga in Kalu, Mmereole and Osuocha (2017) further observed that in most public senior secondary schools in the North-Central of Nigeria, officials still go through the laborious exercise of manually registering students, maintaining records of pupils' performance, keeping inventory list of supplies, etc.

One of the common features of the 21st century teaching is that there is a shift from analogue (usual manual) teaching to a digitally based (technological) teaching. This idea is in agreement with the proposition of Abraham and Chuku (2018) that the 21st century education emphasizes a technological-based education that is problem-solving. Modern day teachers need ICT (information and skills) to professionally balance in the global knowledge wave. Barawi (2017) propose that information referred to the knowledge obtained from the processing, manipulation, and transmission of raw data into a meaningful form for decision-making. Information is paramount in administration processes and therefore, needs to be communicated.

Communication according to Inegbu (2018) is the passage or transmission of information from a source to a receiver through a channel. The source of information to students are the teachers, hence the necessity of being equipped for their task.

Administrators and teachers need to be acquainted with the scientific methods of managing information due to the multiplicity of educational interest groups and their geographical

distance. Barawi (2017) viewed technology as the use of scientific knowledge, experiences and resources to create and process products that serve human needs. ICT usage of principals centres on their ability to manage secondary schools information through appropriate communication media that are technologically based.

Therefore, the acquisition and usage of ICT knowledge by principals (administrators) is necessary for the fulfilment of their societal educational duties and at the same time satisfy their statutory educational obligations. To this end, Ojo (2012) submitted that the management of students' record with ICT in secondary school effectively lies in the hands of staff that are computer literate.

Statement of the Problem

A visit to some public secondary schools in Rivers State revealed that some principals do not have ICT facilities. This does not only constitute a problem but causes a gap in the global trend. More than ever before, education is becoming more digital. As a result, Webber in Solomon (2013) pointed out that despite the success registered in the use of information technology in other sectors of the economy, educational institutions have lagged in the integration of computers for schools management purposes.

Not minding the sensitization programmes and availability of computers in few schools in Rivers State, there is minimal usage of ICT by principals in secondary schools management. This is occasioned by the fact that they lack the skills and dexterity to manipulate these gadgets.

It is disgusting and obsolete to observe that schools still provide regular statistical returns to Schools' Board and Ministry of Education through manual letters, letter by posts, couriers or by telephone conversation. The researchers argue that these methods are not only archaic but practically slow, time consuming, expensive and prone to unnecessary errors.

Apart from the fact that government has failed to give necessary attention to staff training and development in this area, Wilding and Blackford in Everlyne (2010) in their research report argued that educators need to experience a major technological change management programme in order to start addressing the new situation. Up till now, some principals are yet to avail themselves the opportunity of acquiring computer knowledge that will enable them manage the technological challenges resulting from ICT in school administration.

Aim and Objectives

This study aimed at investigating the status of principals' ICT usage in secondary schools administration in Rivers State.

The objectives therefore include to:

1. investigate the availability of ICT facilities in secondary school administration in Rivers State.
2. identify the skills possessed by the principals in utilizing ICT facilities in secondary school administration in Rivers State.
3. investigate the status of principals' ICT application in secondary school administration in Rivers State.
4. investigate the socio-demographic factors that influence principals' ICT usage in secondary school in Rivers State.

5. investigate the roles of principals' ICT usage in improving secondary school administration in Rivers State.

Research Questions

1. What are the ICT facilities available in secondary school administration in Rivers State?
2. What are the skills possessed by principals in utilizing ICT facilities in secondary school administration in Rivers State?
3. What is the status of principals' ICT application in secondary school administration in Rivers State?
4. What are the socio-demographic factors that influence principals' ICT usage in secondary school administration in Rivers State?
5. What are the roles of principals' ICT usage in improving secondary school administration in Rivers State?

Hypotheses

1. There is no significant difference between the mean ratings of urban and rural principals on the availability of ICT facilities in secondary school administration in Rivers State.
2. There is no significant difference between the mean ratings of urban and rural principals on the skills possessed by the principals in utilizing ICT facilities in secondary school administration in Rivers State.
3. There is no significant difference between the mean ratings of urban and rural principals on the status of principals' ICT application in secondary school administration in Rivers State.
4. There is no significant difference between the mean ratings of urban and rural principals on the socio-demographic factors that influence principals' ICT usage in secondary school administration in Rivers State.
5. There is no significant difference between the mean ratings of urban and rural principals on the roles of principal's ICT usage in improving secondary school administration in Rivers State.

Methodology

The descriptive research design was adopted. The population consisted of 276 principals in the 276 public secondary schools in Rivers State. The sample size was 138 which represent 50% of the total population. This was achieved through simple random sampling technique. The instrument for data collection was a questionnaire titled "Principals' Information and Communication Technology Usage Questionnaire (PICTUQ)", which was a 2 points rating scale of YES =2 points and NO= 1 point. The data were analyzed using mean and standard deviation. The criterion mean of 1.50 was used as benchmark for taking decision on each of the items. Any score up to 1.50 and above was accepted; while score below 1.50 was rejected as not having desired impact. Z-test was used to test the hypotheses at 0.05 level of significance.

Results

Research Question One: What are the ICT facilities available in secondary school administration in Rivers State?

Table 1: Mean ratings and standard deviation of urban and rural teachers in public secondary school on the ICT facilities available in secondary school administration in Rivers State.

S/no	Availability of computer facilities in secondary schools administration in Rivers State?	Rural= 70		Urban= 68		Mean set	Decision
		$\bar{X}_1$	SD_1	$\bar{X}_2$	SD_2		
1	Computer lab.	1.4	1.2	1.4	1.2	1.4	Rejected
2	Computer(s)	1.4	1.2	1.3	1.1	1.4	Rejected
3	Scanner, photocopier, printer	1.3	1.1	1.2	1.1	1.3	Rejected
4	Projector	1.4	1.2	1.2	1.1	1.3	Rejected
5	Plant	1.4	1.2	1.3	1.1	1.4	Rejected
	Aggregate	**1.4**	**1.2**	**1.3**	**1.1**	**1.4**	Rejected

Table one showed that all the items 1, 2, 3, 4and 5, and their aggregate mean sets of 1.4, 1.4, 1.3, 1.3, and 1.4 were rejected. The aggregate response of both rural and urban principals (1.4) was below the criterion mean of 1.50.

Research Question Two: What are the skills possessed by the principals in utilizing ICT facilities in secondary schools administration in Rivers State?

Table 2: Mean ratings and standard deviation of urban and rural teachers in public secondary school on the skills possessed by the principals in
utilizing ICT facilities in secondary schools' administration in Rivers State.

S/no	Skills possess by the principals in utilizing ICT facilities in secondary schools administration in Rivers State.	Rural=70		Urban=68		Mean set	Decision
		$\bar{X}_1$	SD_1	$\bar{X}_2$	SD_2		
1	Microsoft word	1.4	1.2	1.3	1.1	1.4	Rejected
2	Microsoft excel	1.3	1.1	1.4	1.2	1.4	Rejected
3	Microsoft PowerPoint	1.4	1.2	1.4	1.2	1.4	Rejected
4	Sending and receiving mails	1.5	1.2	1.5	1.2	1.5	Accepted
5	Whatsapp /Facebook	1.5	1.2	1.5	1.2	1.5	Accepted
	Aggregate	**1.4**	**1.2**	**1.4**	**1.2**	**1.4**	Rejected

Table 2 showed that the aggregate mean of the respondents' responses of 1.4 was below the criterion mean of 1.50. However, only items 4 and 5 which were 'sending and receiving mails', and 'whatsapp/Facebook' respectively met the criterion mean of 1.5. Both rural and urban school principals possess those ICT skills.

Research Question Three: What are the statuses of principals' ICT application in secondary schools administration in Rivers State?

Table 3: Mean ratings and standard deviation of urban and rural teachers in public secondary school on the status of principals' ICT application in secondary schools administration in Rivers State.

S/no	Principals' ICT application in secondary schools administration in Rivers State	Rural=70		Rural=68		Mean set	Decision
		$\bar{X}_1$	SD_1	$\bar{X}_2$	SD_2		
1	Taking inventory of school assets	1.4	1.2	1.3	1.1	1.4	Rejected
2	Management of human resources	1	1	1.5	1.2	1.3	Rejected
3	Monitoring of learning process	1.3	1.1	1.3	1.1	1.3	Rejected
4	Monitoring of admission	1.4	1.2	1.1	1.3	1.3	Rejected
5	Monitoring of students result	1.4	1.2	1.3	1.1	1.4	Rejected
	Aggregate	**1.3**	**1.1**	**1.**	**1.1**	**1.4**	**Rejected**

Table 3 showed that all the items, 1,2,3,4 and 5, and their mean sets of 1.4, 1.3, 1.3, 1.3, and 1.4 were rejected. This was because their aggregate mean set of 1.4 was below the criterion mean of 1.50.

Research Question Four: What are the socio-demographic factors that influence principals' ICT usage in public secondary school in Rivers State?

Table 4: Mean ratings and standard deviation of urban and rural teachers in public secondary school on the socio-demographic factors that influence principals' ICT usage in secondary schools in Rivers State

S/no	Socio-demographic factors influencing principals' ICT usage in secondary schools administration in Rivers State	Rural=70		Urban=68		Mean set	Decision
		$\bar{X}_1$	SD_1	$\bar{X}_2$	SD_2		
1	Security	1.5	1.2	1.6	1.3	1.6	Accepted
2	Skilled personnel	1.5	1.3	1.5	1.2	1.6	Accepted
3	Resistance to change	1.5	1.2	1.6	1.3	1.6	Accepted
4	Electricity supply	1.5	1.2	1.5	1.2	1.5	Accepted
5	inadequate or no supply of computer	1.6	1.3	1.5	1.2	1.6	Accepted
	Aggregate	**1.5**	**1.2**	**1.5**	**1.3**	**1.5**	**Accepted**

Table 4 showed that all the items 1,2,3,4 and 5 and their aggregate means of 1.6, 1.6, 1.6, 1.5, and 1.6 were accepted. The table also indicated that the respondents' responses of 1.5 met the criterion mean which was the benchmark for accepting the research question.

Research Question Five: What are the roles of principals' ICT usage in improving secondary school administration in Rivers State?

Table 5: Mean ratings and standard deviation of urban and rural teachers in public secondary school on the roles of principals' ICT usage in improving secondary school administration in Rivers State

S/no	Roles of principals' ICT usage in improving secondary schools administration in Rivers State	Rural=70		Urban=68		Mean set	Decision
		$\bar{X}_1$	SD_1	$\bar{X}_2$	SD_2		
1	Expand access and learning opportunities	1.6	1.3	1.5	1.2	1.6	Accepted
2	It improves education quality	1.7	1.3	1.5	1.2	1.6	Accepted
3	Fast and easy management of information	1.6	1.3	1.6	1.3	1.6	Accepted
4	Helps to share educational resources	1.6	1.3	1.6	1.3	1.6	Accepted
5	Improves system communication	1.5	1.2	1.6	1.3	1.6	Accepted
	Aggregate	**1.6**	**1.3**	**1.6**	**1.3**	**1.6**	**Accepted**

Table 5 showed that all the items 1,2,3,4 and 5 and their aggregate means of 1.6, 1.6, 1.6, 1.6, 1.6 were accepted. The table also indicated that the respondents' response of 1.6 was above the criterion mean of 1.50 that was the benchmark for accepting the research question.

Test of Hypotheses

Ho1: There is no significant difference between the mean ratings of urban and rural principals on the availability of ICT facilities in secondary school administration in Rivers State.

Table 6: z-test of difference between the mean ratings of urban and rural principals on the availability of ICT facilities in secondary school administration in Rivers State

Status	N	$\bar{X}$	SD	df	Z-cal	Z-crit	Decision
Urban	70	1.4	1.2	136	0.19	1.96	Rejected
Rural	68	1.3	1.1				

Table 6 revealed that z-calculated (0.19) was less than the z-critical (1.96) at 0.05 level of significance. Based on the decision rule, (z-cal≤ z-crit), the null hypothesis was accepted. This implied that, there is no significant difference between the mean ratings of urban and rural principals on the availability of ICT facilities in secondary schools administration in Rivers State.

Ho2: There is no significant difference between the mean ratings of urban and rural principals on the skills possess by the principals in utilizing ICT facilities in secondary school administration in Rivers State.

Table 7: z-test of difference between the mean ratings of urban and rural principals onthe skills possess by the principals in utilizing ICT facilities in secondary school administration in Rivers State.

Status	**N**	$\bar{X}$	**SD**	**df**	**Z-cal**	**Z-crit**	**Decision**
Urban	70	1.4	1.2	136	0.20	1.96	Rejected
Rural	68	1.4	1.2				

Table 7 revealed that z-calculated (0.20) was less than the z-critical (1.96) at 0.05 level of significance. Based on the decision rule (z-cal≤ z-crit), the null hypothesis was accepted. By implication, the null hypothesis was upheld that there is no significant difference between the mean ratings of urban and rural principals on the skills possess by the principals in utilizing ICT facilities in secondary schools administration in Rivers State.

Ho3: There is no significant difference between the mean ratings of urban and rural principals on the status of principals' ICT application in secondary schools administration in Rivers State.

Table 8: z-test difference between the mean ratings of urban and rural principals on the status of principals' ICT application in secondary schools administration in Rivers State

Status	N	$\bar{X}$	SD	df	Z-cal	Z-crit	Decision
Urban	70	1.3	1.1	136	0.`8	1.96	Rejected
Rural	68	1.1	1.1				

Table 8 showed that z-calculated (0.18) was less than the z-critical (1.96) at 0.05 level of significance. Based on the decision rule, (z-cal≤ z-crit), the null hypothesis was maintained. This implied that, there is no significant difference between the mean ratings of urban and rural principals on the status of principal's ICT application in secondary schools administration in Rivers State.

Ho4: There is no significant difference between the mean ratings of urban and rural principals on the socio-demographic factors that influence principal's ICT usage in secondary schools principals in Rivers State.

Table 9: There is no significant difference between the mean ratings of urban and rural principals on the socio-demographic factors that influence principal's ICT usage in secondary schools principals in Rivers State.

Status	N	$\bar{X}$	SD	df	Z-cal	Z-crit	Decision
Urban	70	1.5	1.2	136	0.21	1.96	Accepted
Rural	68	1.5	1.3				

Table 9 showed that z-calculated (0.21) was less than the z-critical (1.96) at 0.05 level of significance. Based on the decision rule (z-cal≤ z-crit), the null hypothesis was accepted. This implied that, there is no significant difference between the mean ratings of urban and rural principals on the socio-demographic factors that influence principals' ICT usage in secondary schools principals in Rivers State.

Ho5: There is no significant difference between the mean ratings of urban and rural principals on the roles of principal's ICT usage in improving secondary schools administration in Rivers State.

Table 10: z-test of difference between the mean ratings of urban and rural principals on the roles of principal's ICT usage in improving secondary schools administration in Rivers State

Status	N	$\bar{X}$	SD	df	Z-cal	Z-crit	Decision
Urban	70	1.6	1.3	136	0.22	1.96	Accepted
Rural	68	1.6	1.3				

Table 10 showed that z-calculated (0.22) was less than the z-critical (1.96) at 0.05 level of significance. Based on the decision rule (z-cal≤ z-crit), the null hypothesis was upheld that, there is no significant difference between the mean ratings of urban and rural principals on the roles of principals' ICT usage in improving secondary schools administration in Rivers State.

Discussion of Findings

The study revealed that both the rural and urban principals upheld the fact that there is no computer lab, computers, scanner, projector and plants in public secondary schools in Rivers State. The technologies that is embedded in ICT are computers, internet, broadcasting technologies (radio and television), and telephone (Chigozie-Okwum, 2018). Webber in Solomon (2013) over out that despite the success registered in the use of information technology in other sectors of economy, educational institutions have lagged in the integration of computers for schools management purpose.

The study revealed that most public secondary school principals do not possess ICT skills such as Microsoft word, Microsoft excel, Microsoft PowerPoint, sending and receiving mails and Facebook or WhatsApp.

The study showed that most principals in urban and rural public schools do not know how to use ICT for taking inventory of school assets, management of human resources, monitoring learning process, monitoring admission, and monitoring students' results. Eguwunyenga in Kalu, Mmereole and Osuocha (2017) further observed that in most public senior secondary schools in Nigeria, officials still go through the laborious exercise of manually registering students, maintaining records of pupils' performance, and keeping inventory list of supplies

The study revealed that urban and rural principal accepted that socio-demographic factor influencing principals' ICT usages are security, skilled personnel, resistance to change, electricity and inadequate supply of computer.

The study also revealed that principals of urban and rural public schools in Rivers State accepted that expanded access and learning opportunities, improved education quality, fast and easy management of information, sharing of educational resources, and improvement in communication system were roles that improve secondary school administration.

Conclusion

Principals' administrative functions required ICT aids in order to remain relevant in the education system. ICT facilities are not only needed by the principals but they can be of immense importance to the students as well.

Recommendations

The study recommends that:

1. ICT facilities should be installed in all secondary schools in Rivers State
2. Adequate number of experts should be employed to train principals and students in this area.
3. Appropriate security gadgets should be put in 0place to secure these facilities (when provided and installed).
4. Adequate funds should be provided to fund the process for quality educational service delivery in schools.
5. Government should set committee to install and monitor ICT facilities and its usage in public schools in Rivers State.

References

Abraham, L. N., & Chuku, B. J. (2018). Application of Information and Communication Technology (ICT) in teaching Geography in Secondary Schools in Obio/Akpor, Rivers state, Nigeria. *International Journal of Scientific Research in Education, 11*(1), 28-50.

Barawi, M.N. (2017). *Everyday computing: An ICT approach* (3rd Ed.) Nigeria: Jomat Services.

Chigozie-ogbum, C.C. (2018). Policies on information and communication technology education planning. In Ololube, N.P. (Ed.) *Handbook on research and educational planning and policy analysis (256-278)*, Port Harcourt: Pearl publishers.

Everlyne, S. M. (2010). *Principals' literacy in information and communication technology (ICT): towards improving secondary school performance in Kenya*. A Doctor of Education Thesis, University of South Africa.

Inegbo, S.O. (2018). Barriers to effective communication in institutions: The key to effective management. In Ololube, N. P. (Ed.*) Encyclopedia of institutional leadership, policy and management (491-500)*. Port Harcourt: Pearl publishers.

Kalu, C., Mmereole, N., & Osuocha O. (2017). Influence of ICT on the management of student records in public senior secondary schools in Nassarawa State. *Nigerian Journal of Education Administration and Planning.* 17(4) 1219-1230

Maduabum, M.A. (2007). *Fundamentals of educational research* (3rd. Ed.) Port Harcourt: Firstborn Printers.

Ogenme, U. (2018). Communication and management of change in institution. In Ololube, N. P. (Ed.) *Encyclopedia of institutional leadership, policy and management (534-549)*, Port Harcourt: Pearl publishers.

Ogoche, M. D., Haruna J. E., Animoku, E.A., Usman, S. & Shuaibu, K. (2017). Utilization of information and technology in the management of staff personnel services for value-reorientation and sustainable national development in private colleges of education in North-Central of Nigeria. *Nigerian Journal of Educational Administration and Planning.* 17(4) 1206-1218.

Ojo, D. (2012). *An exploratory study of some correlates sustainable electronic health information management system in Nigeria teaching hospital*. A Ph.D. pre-field seminar presented to the Department of Information resources Management, Babcock University of Postgraduate Studies. Unpublished.

Oluyemisi, A. O. (2015). ICT and effective school management: administrators' perspective. *Proceedings of the World Congress on Engineering* (1) 1 - 3, London, U.K.

Solomon, M. (2013). *Effect of computers in management of secondary schools in Kenya a case of west Pokot County, Kenya*. Unpublished M.A. Thesis Department of Extramural Studies, of the University of Nairobi, Kenya.