
Utilization of Available Information and Communication Technology (ICT) as a Correlate of Principals' Management and Administrative Effectiveness in Public Secondary Schools in Ikot Ekpene Education Zone, Akwa Ibom State

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ABSTRACT

The purpose of this study is to assess the utilization of available information and communication technology (ICT) as a correlate of principals' management and administrative effectiveness in public secondary schools in Ikot Ekpene Education Zone, Akwa Ibom State. The study was carried out in Ikot Ekpene Education Zone, Akwa Ibom State. The Ikot Ekpene Education Zone is made up of nine Local Government Areas, namely: Oruk Anam, Ikot Ekpene, Obot Akara, Ukanafun, Ikono, Etim Ekpo, Essien Udim, Ini and Abak. Correlation research design was used for the study. This design was considered appropriate for this research as it will investigate the already existing relationship between the independent variable (school conflicts) and the dependent variable (effective resolution strategy). The population of the study comprises all the 86 principals and 2008 teachers in public secondary schools in Ikot Ekpene Education Zone, Akwa Ibom State, Nigeria. A multi-stage sampling technique was used to sample 69 principals and 602 teachers serving in public secondary schools in Ikot Ekpene, which constituted the sample size used for the study. The instrument used for data collection was a researcher-developed questionnaire titled "ICT Availability and Utilization Questionnaire (ICTAUQ)" for principals while "Principals' Administrative Effectiveness Questionnaire (PAEQ)" was developed for teachers. The instruments (ICTAUQ and PAEQ) used for the research were made to pass through face and content validation using experts in test, measurement and evaluation. Instrument reliability was tested using the Cronbach reliability test at 0.78 coefficients. Pearson was used to answer the research questions, while linear regression analysis was used to test the hypothesis at a 0.05 level of significance. Based on the findings of this study, it was concluded that the utilization of the available ICT predicted 58% of the principals' data management effectiveness. Also, the test of significance, affirmed that the utilization of the available ICT significantly correlates with the principals' data management effectiveness. One of the recommendations made in the study was that the school principals should be given in-service training on effective ways of using ICT for computation of results.

KEYWORDS: Information and Communication Technology (ICT), Principals' Management, Administrative Effectiveness, Ikot Ekpene Education Zone

Introduction

In recent years, ICT utilization has been effective in education administration and management to support sustainable development. Following the dramatically accelerated change in scope and pace around the world, the work of administrators has changed in organizations,

including schools, from manual and mechanical to electronic data processing, storage, output, and communication. Taylor and Hogenbirk (2001) suggested that the transformational rate of change might find professionals outdated in their own profession, thus countries that do not integrate policies of scientific and technology development with education components will be left behind. School principals are no exception; they face the challenges of change in their operations. Administrators' participation in professional development is crucial for any meaningful change to occur as they have a vital role to play. Data use in school administration currently ranges across multiple areas, informing administrators about demographics, school processes, as well as perceptions and projections (Bernhardt, 2000). School administrators and teachers should get started on data analysis and database work, wherever they are, for school improvement. School principals in Akwa Ibom State cannot perform their administrative duties without accurate, timely, sufficient, and relevant information.

According to Asfhari, Ghavifekr, Saedah, and Rahmad (2012), school principals should have basic skills in using ICT in their daily administrative and management jobs. Principals function as role models when computer technology is applied to administrative and managerial tasks. As instructional leaders, principals facilitate teachers' integration of computers into teaching and learning (Singh & Muniandi, 2012). As transformational leaders, they encourage creativity, open-mindedness, and facilitate conditions and events that create a positive environment for technology adoption (Asfhari et al., 2012). Mwalongo (2011) has found that people in administration use computers to prepare school announcements, reports, letters for meetings with parents, and student registration. Besides, computers are also used effectively by principals to process, store, and retrieve administrative information (Selwood, 2004).

Statement of Problem

Considering the important role that school principals play in the instructional process, it is argued that the more knowledgeable, skillful, and up-to-date a principal is in the utilization of information and communication technology, the more likely he will achieve administrative effectiveness. There are problems associated with poor record keeping which, with the proper utilization of ICT infrastructure in school administration, these problems could be rectified. Poor record keeping causes waste of time in trying to get records to work with. Sometimes, records are unavailable when they are needed because of the difficulty of retrieving information due to the fact that the record has not been properly filed or kept. But with the use of computers, which can store up to thousands of files in their memory, it only requires the utilization of ICT resources to enhance administrative effectiveness. It is in recognition with this that the researcher conceives that utilization of information and communication technology will enhance principals' administrative effectiveness in Ikot Ekpene Education Zone, Akwa Ibom state.

Purpose of the Study

The purpose of this study is to assess the utilization of available information and communication technology (ICT) as a correlate of principals' management and administrative effectiveness in public secondary schools in Ikot Ekpene Education Zone, Akwa Ibom State. Specifically, the study seeks to:

1. Find out the extent to which the utilization of available ICT correlate with principals' data management effectiveness in public secondary schools in Ikot Ekpene Education Zone, Akwa Ibom State.
2. Find out the extent to which the utilization of the available ICT correlate with principals' effectiveness in areas of communication, computation of results and data management in public secondary schools in Ikot Ekpene Education Zone, Akwa Ibom State.

Research Questions

1. To what extent does the utilization of available ICT correlate with principals' data management effectiveness in public secondary schools in Ikot Ekpene Education Zone, Akwa Ibom State?
2. To what extent does the utilization of available ICT correlate with principals' effectiveness in areas of communication, computation of result and data management in public secondary schools in Ikot Ekpene Education Zone, Akwa Ibom State?

Research Hypotheses

The following null hypotheses guided the study at 0.05 level of significance.

HO₁: The utilization of the available ICT does not significantly correlate with principals data management effectiveness in public secondary schools in Ikot Ekpene Education Zone, Akwa Ibom State.

HO₂: Utilization of available ICT does not significantly correlate with principals' effectiveness in area of communication, computation of result and data management in public secondary schools in Ikot Ekpene Education Zone, Akwa Ibom State.

Significance of the Study

The study will provide information on the utilization of ICT in data management by principals in public secondary schools in Ikot Ekpene Education Zone for effective administration. The information will be useful to the principals and vice principals in the sense that they will discern the relevance of ICT in the administration of secondary schools as they access the school domain and make use of the data available in their school database.

Finally, the study will be beneficial to researchers as the findings of the study would open up avenues for further research on educational management. The results of the findings will also be useful to educational policy makers when determining the principles that will guide policy formulation on the availability and utilization of ICT tools by various institutions. The educational policy makers may also find reason to recommend in-service training for all principals on effective utilization of ICT in Ikot Ekpene Education Zone in order to promote effective school administration.

Review of Related Literature

ICT Utilization and Principals' Data Management Effectiveness

Information and communication technology, according to Nwangwu (2005), is the process in which information (input) is recorded, stored, and retrieved (processed) for decision-making (output) in planning, coordination, and controlling. Information communication technology focuses on understanding the processes, systems, and mechanisms pertaining to information storage, absorption, transfer, presentation, and processes through understanding the scientific principles in school management. In discussing what educational ICT is, Adedoyin (2008) articulates that in general, ICT refers to the totality of methods and tools that are used in gathering, storing, processing and communicating information. Data management, on the other hand, is the process by which the required data is acquired, validated, stored, protected, and processed, and by which its accessibility and timeliness are ensured to satisfy the needs of the data users. It is the effective, efficient, and systematic control of the processes of creating, receiving, maintaining, and disposing of valuable information about the organization (Bluin, 2000). The actualization of effectiveness in secondary schools depends on proper data management. This should be done not only for safety, but also to ensure that they (data) can be found when needed (Bello, 2005). The introduction of ICT in the management of education became an antidote in providing effective solutions to educational problems that would have been difficult, if not possible to solve through human effort.

Data management as well as its administration is a vital responsibility of school administrators because of the indispensable role that records play in effecting day-to-day operations as well as those affecting long-term policies. School administrators rely on information that is in print. For effective utilization of information, there should be a proper system of storing and retrieving data when needed. School administrators must ensure that all the data necessary for effective decision making and communication is up-to-date. This assertion agreed with the position held by Mbipom (2000) when she postulated that at both the primary and secondary levels, the school administrator needed a lot of information to be able to plan, organize, and administer effectively. It is difficult to carry all the important information in one person's head. This explains why every good institution keeps specific records steadily. Also, recording data electronically, sorting it centrally, and sharing it with colleagues are vital to reducing workloads through available ICT infrastructures (Devon, 2004).

ICT Utilization and Principal's Administrative Effectiveness in areas of communication, computation of result and data management

Definitely, the school principal needs the assistance of ICT equipment such as the computers to neatly produce his documents, reproduce and keep them for future use. The ability of the school head to effectively plan and manage his school nowadays is enhanced by the use of ICT equipment for downward and lateral communications, computation of results, and data management. ICT serves as a necessary aid to the principal in the area of record keeping (Awoyokun, 2009). Computers are used for data processing, which facilitates decision making for effective administration, classroom management and individual student management, markings, analyzing tests, grading, diagnosis, and the monitoring of learners' progress. They improve the efficiency and productivity level of information. Computers perform intensive tasks and store large volumes of data and information. Grades must be recorded in some way, and these records must be easily and quickly accessible to appropriate individuals (Ward, 2010).

The use of computers in educational administration reduces time expended on clerical or paper work tasks, produces accurate information, ensures the generation of reports when needed, and facilitates the decision-making process. ICT equipment is very useful in the management of a library. It will be a herculean task for a librarian to keep the records of periodicals, books, and other library materials manually. On this note, the following are some of the essential records that can be found in most secondary schools that enhance efficient and effective administration: admission register, attendance register, log book, query book, school diary, school cash book, and time book (Mbipom, 2000).

Methods

Research Design: Correlation research design was used for the study.

Area of the Study: The study was carried out in Ikot Ekpene Education Zone, Akwa Ibom State. It is made up of nine LGAs, namely: Oruk Anam, Ikot Ekpene, Obot Akara, Ukanafun, Ikono, Etim Ekpo, Essien Udim, Ini, and Abak.

Population of the Study: The population comprised all the 86 principals and 2008 teachers in public secondary schools in Ikot Ekpene Education Zone, Akwa Ibom State, Nigeria (State Secondary Education Board, 2016).

Sample and Sampling Technique: A sample of 69 principals and 602 teachers serving in public secondary schools in Ikot Ekpene Education Zone, Akwa Ibom State participated in the study. A multi-stage sampling technique was used to select the samples. The sample represents 80 per cent of the principal population in public secondary schools in Ikot Ekpene Education Zone. Thereafter, 30 per cent of the teachers in the selected 69 public secondary schools were proportionately selected using a systematic random sampling technique.

Instrumentation: Two instruments were developed and used by the researchers for data collection in this study. They are the ICT Availability and Utilization Questionnaire (ICTAUQ) for principals and the Principals' Administrative Effectiveness Questionnaire (PAEQ) for teachers.

Validation of the Instrument: The instrument (ICTAUQ and PAEQ) used for the research was made to pass through face and content validation using experts in test, measurement and evaluation.

Reliability of the Instruments: The reliability of the instruments was established using the Cronbach Alpha reliability method. The Cronbach Alpha Reliability method is a statistical measure of the internal consistency of an instrument. To do this, the researcher conducted a pilot study using 20 principals and 20 teachers in secondary schools which were not used for the study. The analysis produced a 0.78 coefficient value.

Procedure for Data Collection: The researcher with three briefed research assistants administered copies of the questionnaires (ICTAUQ and PAEQ) to all the sampled secondary school principals' and teachers respectively in the study area.

Method of Data Analysis: Pearson was used to answer the research questions, while linear regression analysis was used to test hypotheses at a 0.05 level of significance.

Result and Discussion of Findings

Results

Research Question 1: How does the utilization of the available ICT correlate with principals' data management effectiveness in public secondary schools in Ikot Ekpene Education Zone of Akwa-Ibom state?

Table 1: Relationship between the Utilization of the Available ICT and Principals' Data Management Effectiveness.

R	R-square	Adjusted R-square	Std Error of Estimate
.761 ^a	.579	.577	.730

The data in table 1 shows that the r – square calculated value is 0.58. This r calculated value however indicates a highly positive relationship. This further shows that the utilization of the available ICT predicted 58% of the principals' data management effectiveness.

Hypothesis One: The utilization of the available ICT does not significantly correlate with principals' data management effectiveness in public secondary schools in Ikot Ekpene Education Zone, Akwa Ibom State.

Table 2: Regression Analysis on the Relationship between the Utilization of the Available ICT and Principals' Data Management Effectiveness

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	134.880	1	134.880		
Residual	356.577	669	.533	253.073	.038 ^b
Total	149.457	670			

The table above shows that the F- value was 253.07 while the significant value was 0.038. Since the significant value of 0.038 is less than the alpha value of 0.05, the null hypothesis stated was rejected and the alternate accepted. Therefore, the utilization of the available significantly correlates with the Principals' data management effectiveness.

Research Question 2: To what extent does the utilization of the available ICT correlate with principals' effectiveness in areas of communication, computation of result and data management in Public secondary schools in Ikot Ekpene Education Zone of Akwa-Ibom state?

Table 3: Relationship between the Utilization of the Available ICT and Principals' Effectiveness in areas of Communication, Computation of Result and Data Management

R	R-square	Adjusted R-square	Std Error of Estimate
.639 ^a	.608	.606	.280

Data in table 3 shows the r calculated value of 0.61 which implies a highly positive relationship. The r calculated value suggests that the utilization of the available ICT predict 61% and principals' effectiveness in areas of communication, computation of results and data management in public secondary schools in Ikot Ekpene Education zone of Akwa Ibom State.

Hypothesis Two: Utilization of available ICT does not significantly correlate with principals' effectiveness in area of communication, computation of result and data management in public secondary schools in Ikot Ekpene Education Zone, Akwa Ibom State.

Table 4: Multiple Regression on the Utilization of the Available ICT and Principals' Effectiveness in areas of communication, Computation of Results and Data Management

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	218.716	3	72.905	932.464	.040 ^b
Residual	51.792	664	.078		
Total	270.508	670			

The table above reveals that the F-value was 932.46 while the significant value was 0.040. Since the significant value of 0.040 is less than the alpha value of 0.05, the null hypothesis stated is rejected and the alternate hypothesis accepted. Therefore, the utilization of the available ICT significantly correlates with the principals' effectiveness in areas of communication, computation of results and data management.

Discussion of Findings

The result of the analysis in table 1 revealed that the utilization of the available ICT predicted 58% of the principals' data management effectiveness. The findings agreed with Selwood (2004), who found that computer spreadsheet applications are used to prepare timetables, handle financial work, store records, and maintain quick communication access. The computer spreadsheet application helps principals with recording school financial documents such as balance sheets, pay slips, reports of non-salary, grants, and stock keeping.

Further linear regression analysis shows that the utilization of the available computer spreadsheet in data management significantly correlates with the principals' administrative effectiveness. The present finding supports Bello (2005), who stated that principals are required to keep records not only because it is a statutory duty but because of its value in improving management practices.

The findings in table 3 showed that the utilization of the available ICT predicts 60% of the principals' effectiveness in the areas of communication, computation of results, and data management in public secondary schools in the Ikot Ekpene Education Zone of Akwa Ibom State. The finding implies that the use of ICT in areas of communication, as well as for computation of results and data management, exerts a very high influence on principals' effectiveness in public secondary schools. This fact was further affirmed by the result of the analysis of data in Table 4. The result indicated that the utilization of the available ICT significantly correlates with the principals' effectiveness in the areas of communication,

computation of results, and data management. The findings concur with that of Mbipom (2000), who stated that computers and other ICT tools would be very handy tools in the hands of an effective school administrator to help him or her be effective in his or her school administration.

Conclusion

Based on the findings of this study, it was concluded that the utilization of the available ICT predicted 58% of the principals' data management effectiveness. Also, the test of significance, affirmed that the utilization of the available ICT significantly correlates with the principals' data management effectiveness.

Finally, it was also concluded that the utilization of the available ICT predicted 60% of the principals' effectiveness in the areas of communication, computation of results, and data management in public secondary schools in the Ikot Ekpene Education Zone of Akwa Ibom State. This affirms that the observed significant correlation of available ICT significantly correlates with the principals' effectiveness in the areas of communication, computation of results, and data management.

Recommendations

The following recommendations are deemed necessary:

1. Educating Prospective School Principals: The school principals should be given in-service training on effective ways of using ICT for computation of results.
2. Computer science teachers already employed in schools should assist in training and educating the ICT-based amateur principals on effective use of ICT facilities for data management.

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