

ASSESSMENT OF PRINCIPALS' USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY FOR EFFECTIVE MANAGEMENT OF SECONDARY SCHOOLS IN ANAMBRA STATE

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Abstract

The main purpose of the study was to assess principal utilization of information and communication technology for effective management of secondary schools in Anambra State. Two research questions guided the study and two hypotheses were tested at 0.05 level of significance. The descriptive survey research design was adopted for the study. The population comprised 5,136 individuals, including 265 principals and 4,871 teachers across 265 secondary schools in the state's six education zones. A sample of 1,027 principals and teachers was selected using multi-stage, proportionate random sampling, with 20% of the population chosen. Data collection was carried out using a self-constructed questionnaire which was validated by experts. The reliability of the instrument was ascertained through a pilot test in Enugu State. Test on the data collected using Cronbach Alpha yielded coefficient of 0.73 and 0.82 for cluster 1 and 2 respectively with a grand coefficient of 0.78. Mean, standard deviation and t-test was used to analyze data for the study. The finding of the study revealed that principals utilize ICT in planning process for effective management of secondary schools in Anambra State to a low extent. Similarly, principals' utilization of ICT in record keeping process for effective management of secondary schools in Anambra State was to a low extent. Principals and teachers did not differ in their opinions on the extent of principals' utilization of ICT for effective management of secondary schools in Anambra

State. Based on the findings of the study, the researcher recommended among others that the state government and relevant educational authorities should organise regular capacity-building workshops and training programmes for principals.

Keywords: Effective, Information and Communication Technology, Management, Principals, Utilization

Introduction

Education is universally acknowledged as the foundation for innovation and a crucial driver of scientific and technological progress. It instils essential values in individuals, enabling them to function effectively in society. As noted by Temesgen (2017), education plays a fundamental role in advancing all facets of a nation's development. Secondary education, in particular, serves as the preparatory stage before tertiary education. The National Policy on Education (Federal Republic of Nigeria (FRN), 2013) defined secondary education as the stage following primary education and preceding tertiary education. The 2013 National Policy on Education aims to ensure equitable access to quality secondary education while promoting Nigerian culture, independent thinking, and national unity. It also seeks to instil respect for labour, foster mutual understanding, and inspire students towards self-improvement and excellence.

Achieving these goals effectively necessitates competent leadership from school principals. Ogbo, Anyanwu, Emengini, Okeke-James, and Umeozor (2021) described the principal as the executive and administrative head of secondary schools in Nigeria. Similarly,

Ugwu, Emengini, Okeke-James, Igbokwe, and Oparaji (2020) defined the principal as the supervisor and administrator responsible for managing the school. Effective management is considered a holistic process involving coordination, guidance, and the integration of human efforts towards specific objectives (Elujekwute, Habib, & Ogundipe, 2021). According to Roy (2022), management encompasses efficiency, effectiveness, and performance measurement, all of which contribute to organisational success. Given the extensive responsibilities of school principals, there is an increasing need to explore strategies that streamline their tasks while maintaining high efficiency. This has sparked interest in evaluating the role of ICT in school management, leading to this research. Despite the advantages of incorporating ICT into school administration, observations suggest that many principals do not utilise ICT in their managerial functions, reducing their effectiveness.

In Anambra State, for instance, it has been observed that most principals still rely on manual methods for staff management, appraisals, postings, record-keeping, delegation of duties, and work distribution. This approach presents significant challenges, particularly in retrieving vital school records. Furthermore, many

principals appear to lack ICT literacy in areas such as staff planning and record-keeping leading to a reluctance to embrace digital solutions. Consequently, many outsource ICT-related tasks to technicians and supposed experts, some of whom have been found to manipulate staff and student records.

Information and Communication Technology (ICT) encompasses a broad range of technological tools and systems designed for communication, information creation, storage, management, dissemination, and retrieval. According to Ukpoma (2019), ICT includes all types of computer-based communication equipment and software used for processing and transmitting information in various forms. In the context of education, ICT comprises hardware and software technologies that facilitate educational information management (Nnaekwe & Ugwu, 2019).

A principal's ability to effectively carry out managerial responsibilities is essential in achieving national secondary education objectives. These managerial functions, as outlined by Okeke and Ikediugwu (2021), include planning, record keeping, budgeting, directing, controlling, staffing, supervising, organising, evaluating, and appraising daily school operations. However, this study focuses on two key functions: planning and record keeping, as they fall within the study's scope. The adoption of ICT is crucial in enhancing the efficiency of these managerial functions.

Planning, as described by Obineme, Okparaji and Nwigwe (2021), involves developing structured strategies to achieve educational objectives, essentially preparing for future changes by outlining necessary actions. To implement this effectively, principals can utilise ICT tools such as personal computers to maintain a database of school resources, facilitating resource tracking and decision-making regarding additional needs (Chika & Raji, 2021).

Another essential managerial function is record keeping, which ensures proper documentation and retrieval of information. Kintu (2023) opined that accurate and reliable data management is vital in school administration. Given the increasing complexity of educational management, the use of ICT enables principals to efficiently handle staff and student records, ensuring effective information management in schools. Beyond the utilization of ICT for effective management, gender is considered a factor that could influence the utilization of ICT for effective secondary school management. These views have however not been empirically in secondary schools in Anambra State. It is against this background that the researcher empirically assessed principal utilization of information and communication technology for effective management of secondary schools in Anambra State.

Statement of the Problem

Management is an important component of an effective school system, as it ensures the

proper coordination of human and material resources to achieve educational objectives. In secondary schools, efficient management plays a key role in maintaining order, enhancing productivity, and fostering an environment conducive to learning. However, in Anambra State, the management of secondary schools appears to be ineffective, raising concerns about the overall functionality of the school system.

The slow and sluggish execution of administrative tasks is particularly worrisome, as it affects the smooth operation of schools. The continued reliance on manual methods for school planning and record-keeping has resulted in delays in decision-making processes and, in some instances, the loss of essential school documents. These inefficiencies disrupt school programmes and hinder effective administration. The researcher is deeply concerned that if these issues persist, they may significantly impact the development goals of secondary education in Anambra State and compromise the quality of human capital emerging from the school system. It is against this background that the researcher assessed principal utilization of information and communication technology for effective management of secondary schools in Anambra State.

Purpose of the Study

The main purpose of the study was to assess Principals' use of Information and Communications Technology (ICT) for effective management of secondary schools

in Anambra State. Specifically, the study seeks to:

1. ascertain the extent Principals utilize ICT in planning process for effective management of secondary schools in Anambra State.
2. determine the extent Principals utilize ICT in record keeping process for effective management of secondary schools in Anambra state.

Research Questions

The following research questions will guide this study

1. To what extent do Principals utilize ICT in planning process for effective management of secondary schools in Anambra State?
2. To what extent do Principals utilize ICT in record keeping process for effective management of secondary schools in Anambra state?

Hypotheses

The following null hypotheses were formulated and tested at 0.05 level of significance using t-test.

1. There is no significant difference between the mean rating scores of principals and teachers on the extent to which principals utilize ICT in the planning process for effective management of secondary schools in Anambra state

2. There is no significant difference between the mean rating principals and teachers on the extent to which they utilize ICT in the record keeping process for effective management of secondary schools in Anambra state

Methodology

The study adopted a descriptive survey research design and was conducted in state government-owned secondary schools in Anambra State. The population comprised 5,136 individuals, including 265 principals and 4,871 teachers across 265 secondary schools in the state's six education zones. A sample of 1,027 principals and teachers was selected using multi-stage, proportionate random sampling, with 20% of the population chosen. Data collection was carried out using a self-constructed questionnaire titled "Assessment of Principals' Use of ICT for Effective Management Questionnaire (APUICTEMQ)," which was divided into sections. Section A will focused on personal data of the respondents while section B bears the item questionnaire. Section B is further divided into subheadings capturing the two research questions. The response format for the questionnaire is Very High Extent (VHE), High Extent (HE), Low Extent (LE) and Very Low Extent (VLE). The instrument underwent face validation by three education experts. Two experts from Department of Educational Management, and one expert from the Department of Mathematics and Computer Education, all from the Faculty of

Education, Enugu State University of Science and Technology (ESUT).

To establish the internal reliability of the instrument, copies of questionnaire were administered to 30 respondents made up of 10 principals and 20 teachers in twenty public secondary schools in Enugu State, Udi to be precisely, who were not part of the population for the study. Enugu State was chosen because it is one of the south-eastern state that share common characteristics, such as boundary, language, culture, educational opportunities with Anambra State. Data collated from the respondents were used to establish the internal consistency using Cronbach Alpha method. Cronbach Alpha was deemed appropriate since it is applicable to items that are not dichotomously scored. Reliability coefficient of 0.73 and 0.82 were obtained from the two cluster questionnaire item respectively. A grand coefficient of 0.78 was obtained indicating that the instrument is reliable

Data collection was facilitated by two research assistants, and the on-the-spot method was employed to ensure a high retrieval rate of 92%. Statistical analysis was conducted using the Statistical Package for Social Sciences (SPSS), where frequencies, means, and standard deviations were used to answer the research questions. A four-point Likert scale was adopted, with a mean score of 2.50 and above indicating agreement, while scores below 2.50 signified disagreement. The two research hypotheses were tested using a t-test at a 0.05 level of significance, with interpretations based on

the significance values from the SPSS output. The null hypothesis was rejected when the significant value is less than .05 but was not rejected when it is greater than .05.

Research question one: To what extent do Principals utilize ICT in planning process for effective management of secondary schools in Anambra State?

Results

Table 1: Mean Score Responses of Principals and Teachers on the Extent Principals Utilize ICT in Planning Process for Effective Management of Secondary Schools in Anambra State

SN	Principals' use ICT in,	Principals = 48			Teachers = 897			Total = 945		
		X	SD	Dec.	X	SD	Dec.	X	SD	Dec.
1	Posting teachers to respective classes	2.59	1.14	HE	2.28	1.18	LE	2.33	1.18	LE
2	Making the curriculum and scheme available to teachers and students	2.32	1.18	LE	2.29	1.20	LE	2.30	1.19	LE
3	Preparation of school time-table and allocation of classes to teachers	2.43	1.11	LE	2.54	1.11	HE	2.52	1.11	HE
4	Updating parents on text materials to purchase for their wards	2.24	1.11	LE	2.45	1.10	LE	2.42	1.10	LE
5	Planning and scheduling assessments in the school	2.19	1.19	LE	2.27	1.15	LE	2.26	1.15	LE
6	Computing voucher for contract payments	2.41	1.05	LE	2.54	1.14	HE	2.52	1.12	HE
7	Engaging students on practical lessons in the computer laboratory	2.42	1.14	LE	2.41	1.18	LE	2.41	1.17	LE
8	Re-training of teachers once or twice a term	2.16	1.11	LE	2.46	1.17	LE	2.41	1.16	LE
9	It is used for students admission and registration	2.26	1.11	LE	2.46	1.13	LE	2.42	1.13	LE
10	Preparation of schools/class time table	2.36	1.19	LE	2.39	1.09	LE	2.38	1.11	LE

11	Referencing activities of previous administrators for updates and decision taking	2.57	1.11	HE	2.43	1.11	LE	2.45	1.11	LE
12	Sending e-mails messages for official work	2.56	1.12	HE	2.54	1.05	HE	2.54	1.06	HE
13	Automation of management of Staff leave schedule	2.18	1.15	LE	2.42	1.11	LE	2.39	1.12	LE
14	For management of computer based test for the students	2.32	1.16	LE	2.36	1.15	LE	2.36	1.15	LE
15	It is used for supervision of teachers and entire staff	2.54	1.11	HE	2.45	1.11	LE	2.46	1.11	LE
16	Combination of manual and electronic means is used in students registration	2.47	1.08	LE	2.40	1.10	LE	2.41	1.10	LE
17	Power-point package is extensively used in management and teaching/learning.	2.28	1.18	LE	2.35	1.15	LE	2.34	1.16	LE
18	Principal disseminates information to the staff through computer networking in the school	2.52	0.98	HE	2.39	1.02	LE	2.41	1.01	LE
Grand Mean		2.38	1.12	LE	2.41	1.12	LE	2.41	1.13	LE

Data in table 1 shows the mean score responses of principals and teachers on the extent principals utilize ICT in planning process for effective management of public secondary schools in Anambra State. From the table, principals and teachers disagreed to all the items with mean scores less than 2.50 mean cut off point set for the study, except items 1, 11, 12, 15 and 18 with mean scores 2.59, 2.57, 2.56, 2.54, and 2.52 respectively are greater than 2.50. Similarly, teachers disagreed with all the items, except items 3, 6 and 12 which had mean scores of 2.54, 2.54, and 2.54 respectively. The grand mean score of 2.41 shows that the extent principals utilize ICT in planning process for effective management of secondary schools in Anambra State is to low extent. The overall standard deviation score of 1.13 shows that the mean responses of the principals and teachers are homogenous. The value also shows that the responses are not widely dispersed which implies that

the data has very small range. The small value of the standard deviation also shows that the values from the respondents are clustered around the mean.

Research question two: To what extent do Principals utilize ICT in record keeping process for effective management of secondary schools in Anambra state?

Table 2: Mean score responses of principals and teachers on the extent principals utilize ICT in record keeping process for effective management of secondary schools in Anambra State

SN	Principals' use ICT in,	Principals = 48			Teachers = 897			Total = 945		
		X	SD	Dec.	X	SD	Dec.	X	SD	Dec.
19	Duplicating hardcopy documents	2.64	1.16	HE	2.57	1.13	HE	2.59	1.14	HE
20	Editing students records	2.61	1.16	HE	2.46	1.16	LE	2.48	1.16	LE
21	Saving of documents in soft copy	2.45	1.08	LE	2.51	1.06	HE	2.50	1.06	LE
22	Compilation of teachers annual progress in teaching service	2.41	1.05	LE	2.43	1.09	LE	2.43	1.08	LE
23	Arranging of books at the school library	2.31	1.16	LE	2.31	1.12	LE	2.31	1.12	LE
24	Recording of teachers data	2.48	1.07	LE	2.35	1.05	LE	2.37	1.05	LE
25	Location of books at the library	2.36	1.10	LE	2.32	1.07	LE	2.32	1.08	LE
26	Maintenance of students' attendance	2.44	1.10	LE	2.43	1.14	LE	2.43	1.14	LE
27	To communicate academic details of students to their parents/guardians	2.38	1.10	LE	2.24	1.11	LE	2.26	1.11	LE
28	Students results are issued via the electronic means only.	2.45	1.05	LE	2.31	1.08	LE	2.33	1.08	LE

29 Results are also issued to 2.61 1.10 HE 2.57 1.14 HE 2.57 1.13 HE students in hard copy.

Grand Mean 2.47 1.10 LE 2.41 1.11 LE 2.42 1.10 LE

Data in table 2 shows the mean score responses of principals and teachers on the extent principals utilize ICT in record keeping process for effective management of secondary schools in Anambra State. From the table, male teachers disagreed to all the items with mean scores less than 2.50 mean cut off point set for the study, except items 19, 20, and 29 which had mean scores greater than 2.50 mean cut off point. In like manner, their principals and teachers disagreed with all the items, except items 19, 21 and 29 which had mean scores of greater than 2.50 mean cut off point. The grand mean score of 2.42 shows that the extent principals utilize ICT in record keeping process for effective management of public secondary schools in Anambra State is to low extent. The overall standard deviation score of 1.10 shows that the mean responses of the principals and teachers are homogenous. The value also shows that the responses are not widely dispersed which implies that the data has very small range. The small value of the standard deviation also shows that the values from the respondents are clustered around the mean.

Hypotheses

The following null hypotheses were formulated and tested at 0.05 level of significance

H₀₁: There is no significant difference between the mean response scores of principals and teachers on the extent to which principals utilize ICT in the planning process for effective management of public secondary schools in Anambra state

Table 3: T-Test Results on the Mean Response Scores of Principals and Teachers on the Extent Principals Utilize ICT in the Planning Process for Effective Management of Public Secondary Schools In Anambra State

Class of staff	N	Mean	SD	t	df	Sig	Decision
Principals	48	2.38	1.12	-1.347	943	0.178	NS
Teachers	897	2.41	1.12				

Table 3 shows that the t-test value on the mean rating of principals and teachers on the extent to which principals utilize ICT in the planning process for effective management of secondary schools in Anambra state is -1.347, not significant at 0.178 level of significance, which is greater

than 0.05 level of significance set for the study and therefore, the null hypotheses is not rejected. This means that there is no significance difference between the mean rating of principals and teachers on the extent to which principals utilize ICT in the planning process for effective management of secondary schools in Anambra state.

H0₂: There is no significant difference between the mean response scores of principals and teachers on the extent to which principals utilize ICT in the record keeping process for effective management of secondary schools in Anambra state.

Table 4: T-Test Results on the Mean Rating Scores of Principals and Teachers on the Extent Principals Utilize ICT in the Record Keeping Process for Effective Management of Public Secondary Schools in Anambra State

Class of Staff	N	Mean	SD	t	df	Sig	Decision
Principals	48	2.47	1.10	1.766	943	0.078	NS
Teachers	897	2.41	1.11				

Table 4 shows that the t-test value on the mean response of principals and teachers on the extent to which principals utilize ICT in the record keeping process for effective management of public secondary schools in Anambra state is 1.766, not significant at 0.078 level of significance, which is greater than 0.05 level of significance set for the study and therefore, the null hypotheses is not rejected. This means that there is no significance difference between the mean rating of principals and teachers on the extent to which principals utilize ICT in the record keeping process for effective management of public secondary schools in Anambra state.

Discussion

Research question one sought to find out extent principals utilize ICT in planning process for effective management of public secondary schools in Anambra State. The finding revealed that the extent principals

utilize ICT in planning process for effective management of secondary schools in Anambra State is to low extent. This shows that principals don't utilize ICT in posting teachers to respective classes, making the curriculum and scheme available to teachers and students, updating parents on text

materials to purchase for their wards, planning and scheduling assessments in the school, engaging students on practical lessons in the computer laboratory, and periodic re-training of teachers. However sparsely it is used for students admission and registration, preparation of schools/class time table, referencing activities of previous administrators for updates and decision taking, automation of management of staff leave schedule, for management of computer based test for the students. It is also used for supervision of teachers and entire staff, combination of manual and electronic means is used in students registration, power-point package is extensively used in management and teaching/learning, and disseminates information to the staff through computer networking in the school. This does not agree with the assertion of Chika and Raji (2021) that student administration is an important sector that needs proper management and the computer fits in this aspect in the planning on how their management and administration should be. More so, the finding revealed that principals in Anambra state are not making use of ICT to feel its impact as regard; planning as pointed out by Kintu (2023) that ICTs are influencing all aspects of life and that the influences are felt more and more at schools in planning and management of educational institutions.

Furthermore, the analysis revealed that there is no significant difference between the mean rating of principals' and teachers on the extent to which principals utilize ICT in the planning process for effective management of secondary schools in Anambra state. The

finding agreed with the finding of Chepkonga (2015), who found out that there was no significant relationship between the principals gender and ICT integration in management of secondary schools.

The second finding revealed that the extent principals utilize ICT in record keeping process for effective management of secondary schools in Anambra State is to low extent. This shows that they don't use ICT in editing students records, compilation of teachers annual progress in teaching service, arrangement of books at the school library, recording of teachers data, location of books at the library, maintenance of students' attendance, communicating academic details of students to their parents/guardians, and issuing students results via electronic means. This finding agrees with the submission of Chidiobi (2015) who alerted that principals have discovered that the traditional methods of record management which involves carrying files all about are no safer as there is risk of displacement of documents.

Further analysis revealed that there is no significant difference between the mean rating of principals and teachers on the extent to which principals utilize ICT in the record keeping process for effective management of secondary schools in Anambra state. The finding agreed with the finding of Chepkonga (2015), who found out that there was no significant relationship between the principals' gender and ICT integration in management of secondary schools.

Conclusion

The researcher concludes based on the findings of the study that principals utilize ICT for effective management of secondary schools in Anambra State to a low extent. The study revealed that principals utilize ICT in planning process for effective management of secondary schools in Anambra State to a low extent. Similarly, principals' utilization of ICT in record keeping process for effective management of secondary schools in Anambra State was to a low extent. Principals and teachers did not differ in their opinions on the extent of principals' utilization of ICT for effective management of secondary schools in Anambra State. It is therefore necessary that remediating measures are suggested for improvement.

Recommendations

Based on the findings the following recommendation were made;

1. Given the low extent of ICT utilization in planning and record-keeping, the state government and relevant educational authorities should organise regular capacity-building workshops and training programmes for principals. These programmes should focus on enhancing their ICT skills, particularly in areas such as digital school management, data analytics, and electronic record-keeping.
2. The state government should invest in equipping secondary schools with modern ICT infrastructure, including computers, internet connectivity, and management software. Additionally, ICT support staff should be deployed to assist principals in effectively integrating technology into administrative processes.
3. The Anambra State Ministry of Education should develop and enforce policies that mandate the use of ICT tools in school management. Regular monitoring and evaluation should be conducted to ensure compliance and assess progress in ICT adoption among school administrators.

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