



Relationship between Principals' Utilization of Information and Communication Technology Resources and Administrative Effectiveness in Public Secondary Schools in Gombe State

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ABSTRACT

This study was carried out to determine Information and Communication Technology (ICT) resource utilization and principals' administrative effectiveness in Gombe Local Government of Gombe State. The objective of the study is aimed at finding out whether access, usage in communication and in decision making using information and communication technology (ICT) relates to principals' administrative effectiveness. The research design used for the study is ex-post facto. The population for the study covered all the forty six public secondary schools in Gombe Local Government of the state. Simple random sampling (SRS) method was used to select five administrators in all the forty six (46) secondary schools within the study area. This comprised of the Principals, Vice Principals and Head of Departments making a total of two hundred and thirty (230) respondents for the study. The instrument used for data collection for the study was a structured questionnaires titled ICT resource Utilization and Administrators' Effectiveness Questionnaire (ICTRUAEQ) to generate data for the study. The data was collected and analyzed using mean and standard deviation to answer the research questions while t-test was used to test the hypotheses. The findings of the study revealed that access to ICT facilities, ICT usage in communication process and ICT usage for decision making significantly relate to principals' administrative effectiveness. To encourage and increase the use of ICT by principals, the authors recommended among others that the Gombe State government should introduce ICT Programmes in all the secondary schools in the state to improve the access and usage of ICT in schools by both staff and students. Also, the State Government should establish and properly fund and equip ICT training centers in the State with specialized experts in ICT that can formerly train teachers at the highly subsidized cost.

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INTRODUCTION

The secondary school principal is one who by virtue of his/her position is officially designated as an administrator and leader of the school organization. The achievements of educational goals at the secondary school level is

dependent, to a large extent on the principal who is the chief executive officer capable of applying the appropriate administrative processes in school operations (Akinyemi, 1998).

The principal does not work in isolation; he is in constant interaction with the Ministry of



Education, school management board, teachers, learners and the external environment. The school is an open system that is in constant interaction with the environment. It receives input from the external environment in the form of human and material resources, processes them and empties same into the environment. Consequently, the administrative functions of the principal are very complex.

Succinctly, the administrative functions of the principal are decision making, planning, organizing, communicating, influencing, coordinating and evaluating (Mbipom, 2000). According to Selwood (2005), these tasks are applied in the areas of Curriculum Development, Instructional Supervision, Staff and Student Personnel Administration, Guidance, Finance, Community relations, Construction and Maintenance of facilities and Special Services.

School principals in Gombe State cannot perform their administrative duties without accurate, timely, sufficient and relevant information. The deficiencies associated with storage, preservation and presentation of large volumes of the information in paper form made the administrative processes very cumbersome. It is in recognition of this that a plethora of researcher have been focused on correlates of principals' administrative effectiveness in secondary schools.

Ubani in Njoku (2006) sees ICT in the context of education as the combination of technologies for collecting, storing, processing, communicating and delivery of information related to teaching and learning processes. He identifies three functioning of ICT as follows:

1. Processing information (computer system).
2. Disseminating information (telecommunication systems).
3. Representing information (multimedia systems).

In the same vein, Onuma (2007) see ICT as a broad term that has to do with the harnessing of process, the methods and product of electronic and communication related technologies (and other related resources in today's knowledge driven society), for enhancing the productivity, the spread and efficiency of a set of programmed activities geared towards the achievement of clearly determined goals.

Information and Communication Technology (ICT) encompasses a range of new technologies and their applications including all aspects of the use of computers, micro-electronics devices, and satellite and communication technology.

Accordingly, Moore (1992) in his own opinion posits that technology is the application of knowledge to the achievement of particular goals or to the solution of particular problems. This undoubtedly involves deployment and exploitation of information and communication technology (ICT) in facilitating and accelerating administrative processes in secondary schools. He also observed that information systems (IS) for gathering, storing, processing and disseminating information have been an integral part of each organization's processes but the arrival of technologies which are capable of helping to carry out those processes, changes them to eliminate the needs for some of them and enabling new processes to be developed were lacking.

The various ICT facilities used in the teaching learning process in schools according to Enaktire and Onyene (2007) include: radio, television, computers, overhead projectors and optical fibres, fax machines, CD ROM, internet, electronic notice board, slides, digital multimedia, and video/VCD machine and so on.

Okorie, Agabi and Uche (2005), are of the view that the use of Hi-tech Information and Communication Technology (ICT) as a modern tool for management of complex organizations has become the norm particularly for the advanced world. Its adoption in most of the less advanced societies is yet to achieve the status of stability. However, the growing complexities of secondary schools especially in the era of Universal Basic Education (UBE) in Gombe State and the challenges it poses to school administration makes the application of information communication technology (ICT) indispensable for quality assurance. With the computer spreadsheet, school administration can easily have proper bookkeeping, good budget preparation, financial forecasts and good calculation of figures. Information and communication technology (ICT) has several roles to play in school administration like improving management processes in the area of personnel, time management and human development



among others.

Okwudishu (2005) discovered that the unavailability of some ICT components in school hampers principal's use of ICTs, lack of adequate search skills and access points in the schools were reported as factors inhibiting the use of the internet by secondary school principals. The absence of ICTs, equipment in most Nigerian secondary schools leads some principal to resort to cyber cafes for internet access (Goshit, 2006). Considering the important role that the school principal play in the instructional process, it is therefore argued that the more knowledgeable, skillful and up-to-date a principal is in the utilization of information and communication technology resources, the more likely will he achieve the objectives of education. It is against this background that the researcher conceives the need for a study on utilization of information and communication technology resources to determine the extent to which it enhances principal administrative effectiveness.

The state of administration in secondary schools has been a source of concern to stakeholders. It is often believed that school principals are on the frontline of the battle to create an environment for quality education at the Secondary Schools level. But some school administrators (Principals) in Gombe Local Government of Gombe State in particular, work under difficult conditions and are often not well prepared for the task they must undertake. At least an effective school principal should be able to manage and deploy school resources efficiently; allocate school accommodation appropriately, ensure satisfactory standards of maintenance and cleanliness of school facilities, guide curriculum implementation and organize development programmes. In addition to the above, the principal must create a professional relationship within the school by involving staff members in decision making.

Ideally, school administrators are supposed to be very interested in the aforementioned areas knowing that these areas of school administration constitute the bedrock of any functional administration. But this is not the case in secondary schools in Gombe Local Government of Gombe State.

Administration of secondary schools is

largely dominated by the use of manual operational methods secretaries and typists with outdated typewriters which are common sights in most, if not in all the principals' offices today. The increase in school population, complex goals/objectives, resources and programmes within the school has contributed to the inability of the school principal to carry out their duties effectively.

Presently, the world is experiencing change owing to advancement of information and communication technology (ICT) in various fields of human endeavours. The secondary school system in Gombe Local Government of Gombe State, as social institution, cannot be shielded from being affected by the society within which they operate. Computers and other ICT facilities have become major tools of communication among individuals, organization, governments, and corporate bodies among others.

Innovative use of ICT in administration process in most secondary schools in Gombe Local Government seems not to be widespread. This appears to be made difficult by several constraints which include lack of funds to sustain the ICT infrastructure, inability of secondary school administrators to keep up with pace of development in ICT, lack of staff with appropriate skills to manage ICT both at the strategic and operational levels and absence of institutional policies to support and guide the use of ICT.

The problem of this study is stated thus: how does Information and Communication Technology (ICT) resource utilization relate to secondary school administrators' effectiveness in Gombe Local Government of Gombe State, Nigeria?

THEORETICAL FRAMEWORK

This study is based on the Technology Acceptance Model (TAM) Theory. The theory was propounded by Davis in 1989. Technology Acceptance Model (TAM) presented a theoretical model aiming to predict and explain Information and Communication Technology (ICT) usage behavior, that is, what causes potential adopters to accept or reject the use of information technology. In Technology Acceptance Model (TAM), two theoretical constructs perceived usefulness and perceived ease of system use, are



the fundamental determinants of system use, and predict attitudes toward the use of the system, that is, the user's willingness to use the system.

Perceived usefulness refers to "the degree to which a person believes that using a particular system would enhance his or her job effectiveness" and perceived ease of use refers to "the degree to which a person believes that using a particular system would be free of effort". The reasons for the popularity of TAM as the theoretical framework might be that, first, TAM is a theory specifically developed for Information and Communication Technology (ICT) implementation and adoption research. It is "a theory 'owned' by the Information System (IS) research community" in this field, in which theories are scarce (Lee, 2003). Second, TAM provides a parsimonious, clear and tested framework for ICT adoption and implementation research (Yousafzi, 2007).

A close examination of the applicability of TAM shows that it seem to fit well with conditions in which individuals voluntarily decide whether to use technology personally and when the target technology requires comparatively little effort to learn to use the system (Attewell, 1992 & Fichman, 1992).

TAM includes two of these needs: ease of use, referring to competence ("is it easy for me to use this model?") and usefulness, referring to autonomy ("is it beneficial for me to use this tool for this work task?") in TAM theory, usefulness can be seen as freedom and autonomy of an individual's decision as to whether to experience the use of an ICT system as useful and adopt the tool. In other words, an individual decides whether the tool is useful and then adopts it.

Technology Acceptance Model (TAM) try to respond to the challenge of contextually by adding new independent variables such as individual characteristics (gender, motivation etc.), situational variables (experience, training etc.) or organizational characteristics (subjective norms).

In summary, the implication of this theory to the present study is that any secondary school administrator who perceives the usefulness and the ease of using Information and Communication Technology (ICT) and has the willingness to use ICT resources will be efficient in performing his administrative duties. This is because TAM predicts and explains ICT usage

behavior also, it emphasizes the freedom, autonomy and competence an individual has in deciding the choice of ICT resources in handling a given task.

Purpose of the Study

The main purpose of this study is to determine Information and Communication Technology (ICT) resource and principals' administrative effectiveness in Gombe Local Government of Gombe State. Specifically, this study is aimed at finding out whether:

1. Access to information and communication technology (ICT) relates to principals' administrative effectiveness;
2. Information and communication technology (ICT) usage in communication process relates to principals' administrative effectiveness;
3. Information and communication technology (ICT) usage for decision making relates to principals' administrative effectiveness.

Research Questions

The following research questions was used for the study:

1. How does administrator's access to ICT relate to principals' administrative effectiveness?
2. How does ICT usage in communication process relate to principals' administrative effectiveness?
3. How does ICT usage for decision making relate to principals' administrative effectiveness?

Hypotheses

The following hypotheses were tested:

1. There is no significant relationship between principal's access to ICT and administrative effectiveness.
2. There is no significant relationship between principal's utilization of ICT in communication process and administrative effectiveness.
3. There is no significant relationship between ICT usage for decision making and principals' administrative



effectiveness.

METHODOLOGY

The research design used in this study is ex-post facto. Kerlinger (1986) asserted that ex-post facto research design had been a systematic empirical inquiry and the researcher did not have direct control of independent variables because their manifestations had already occurred or because they were inherently not manipulable. It is concerned with studying the conditions or relationship which existed. In this study, the independent variable (ICT resource utilization) has already occurred in day-to-day administration of secondary school. The research is therefore designed to lead to statistically sound deductive inference regarding the relationship between the independent variable and the dependent variable using the captured data from the instrument administered.

This research was carried out in Gombe Local Government of Gombe State. Gombe Local Government is headquarters of Gombe State and is one of the eleven (11) Local Government Areas of the State. Gombe State is one of the six States in the North-East geo-political zone. The major tribes of its citizen are Fulfulde, Hausa, Tera, Bolawa and Tangale. The major occupation of people in the State is mainly civil servants, farming and business.

Gombe Local Government of Gombe State has a total number of forty six (46) secondary schools (MOE School Statistics 2020). Therefore, the population of the study covered all senior secondary schools in the Local Government. Similarly, in selecting respondents for the study, simple random sampling (SRS) method was used to select five administrators in all the forty six (46) secondary schools in the study area. This comprised of the Principals, Vice

Principals and Head of Departments making a total of two hundred and thirty (230) respondents for the study.

The instrument used for data collection for the study was a structured questionnaires titled ICT resource Utilization and Administrators' Effectiveness Questionnaire (ICTRUAEQ) to generate data for the study. The questionnaire measured ICT usage in communication process, ICT infrastructure and ICT usage for decision-making. Principals, Vice Principals and Head of Departments were used to provide the information on the questionnaire.

The questionnaires were administered to Principals, Vice Principals and Head of Department in the public Secondary Schools in the study area. The questionnaires were distributed to the targeted respondents and retrieved after completion.

The data was collected and analyzed using mean and standard deviation to answer the research questions while t-test was used to test the hypotheses. Responses of the questionnaire items were rated base on the 4 likert scale with the assigned numerical value as: Strongly Agree =4, Agree = 3, Disagree =2 and Strongly Disagree =1. To ascertain the extent to which a response was judge to be Strongly Agree, Agree, Disagree and Strongly Disagree, mean response was used. Considering that the responses are based on a 4-point scale, the mean score of 0.1 to 1.0 considered Strongly Disagree, 1.1 to 2.0 considered Disagree while 2.1 to 3.0 considered Agree and 3.0 to 4.0 considered Strongly Agree.

RESULT

Research Question 1: How does administrator's access to ICT relate to principals' administrative effectiveness?

TABLE 1: Response of the respondents on how administrator's access to ICT relate to principals' administrative effectiveness

Items	4	3	2	1	Mean	SD
I would have love to be more exposed to the use of power point projector	50.9%	25.2%	14.3%	9.6%	3.17	1.00
I am proficient in the use of internet	56.5%	21.7%	17.8%	3.9%	3.30	0.89
I can't afford to pay for internet services	43.5%	37.0%	13.9%	5.7%	3.18	0.87
I don't have computer in my office	39.1%	34.3%	16.5%	10.0%	3.02	0.97



I easily lay hands on computers outside my office	54.3%	28.7%	9.6%	7.4%	3.30	0.92
I am yet to succeed in being expose to the use of power point projector	43.0%	37.8%	15.7%	3.5%	3.20	0.82
Sectional Mean = 3.19				Sectional SD = 0.91		

Source: Field Work 2021

Table 1 presents the analysis of the responses on the administrator's access to ICT relate to principals' administrative effectiveness. The sectional mean and standard deviation of 3.17 and 1.0 of the respondents is indicative that principals in Senior Secondary Schools in Gombe loved to be more exposed to the use of power point projector.

The table further revealed that the mean score of 3.30 was obtained in the area of proficiency in the use of internet. This shows that administrators in Senior Secondary School in Gombe are proficient in the use of internet in their administrative responsibilities. Similarly, most of the respondents indicates that they can't afford to pay for internet services as suggested by mean score of 3.18 and standard deviation of 0.87 respectively.

In the area of possessing the computer in their offices, the analysis revealed that

principals in Gombe Senior Secondary schools were found to have the systems in their offices. This was supported by a mean of 3.02. In addition, a mean score of 3.30 was obtained in the area of using computer outside their office. This shows that Principals in Gombe are using the computer for another personal activities outside the school. The Principal are yet to succeed in being expose to the use of power point projector in carrying out their administrative responsibilities with a mean score of 3.20.

Therefore, with these revelations from the analysis, it is apparent that administrator's access to ICT relate to principals' administrative effectiveness as suggested by sectional mean of 3.19 and standard deviation of 0.91.

Research Question 2: How does ICT usage in communication process relate to principals' administrative effectiveness?

TABLE 2: Response of the respondents on how ICT usage in communication process relate to principals' administrative effectiveness

Items	4	3	2	1	Mean	SD
Information meant for students are relayed to them through internet	55.7%	31.3%	7.8%	5.2%	3.37	0.84
The communication between the principal and the teachers are usually carried out using internet	36.5%	34.3%	18.3%	10.9%	2.96	0.99
Most of the teachers are not computer literate	49.1%	39.1%	7.0%	4.8%	3.32	0.80
I do not use computer for communication because am not a computer literate	33.9%	37.8%	24.3%	3.9%	3.01	0.86
My school does subject allocation through computer	26.1%	42.6%	17.8%	13.5%	2.81	0.97
Communication between my staff and I are usually carried out using internet.	30.9%	36.5%	21.3%	11.3%	2.86	0.98
Sectional Mean = 3.05				Sectional SD = 0.90		

Source: Field Work 2021

Table 2 displays the analysis of the responses on the principal's administrative effectiveness in ICT usage for communication process. Generally, a sectional mean score of 3.37 and standards deviation of 0.84 postulated

that information meant for students are relayed to them through internet. The table further revealed specifically that communication between the principal and the teachers are usually carried out using internet as supported by a mean of 2.96. On



the area of being computer literate, findings show a mean score of 3.32 which proved that Principals effectiveness in discharging this responsibility using ICT is not dependable. Similarly, the table indicated that most of the principal were found not using the computer for communication due to their inability of being literate in ICT. This assertion was supported by a mean score of 3.01. Using subject allocation using computer was found to be effective with evidence of 2.81 mean response score. Furthermore, communication between Principal and members of staff were usually carried out through internet as suggested by mean

score of 2.86 and standard deviation of 0.98. Considering couple with sectional mean score of 3.05 and sub-indicators revelation by their scores, it can be concluded that principals in Gombe Senior Secondary School improve their administrative effectiveness with the use of ICT for communication process in their respective schools.

Research Question 3: How does ICT usage for decision making relate to principals' administrative effectiveness?

TABLE 3: Response of the respondents on how ICT usage for decision making relate to principals' administrative effectiveness

Items	4	3	2	1	Mean	SD
I can't wait to use ICT to make decisions that require urgent action	69.6%	17.0%	9.1%	4.3%	3.51	0.83
I communicate issues requiring decisions regularly to teachers using internet	33.5%	40.9%	12.6%	13.0%	2.94	0.99
I received feedback from them through the same medium	30.0%	38.3%	22.2%	9.6%	2.88	0.94
It is easier to make decisions and record them manually than using computer to do it	43.5%	21.3%	27.0%	8.3%	3.00	1.01
Using ICT in decision-making brings a lot of delay	34.8%	29.6%	17.0%	18.7%	2.80	1.11
Decisions reached with staff are stored in the computer	40.9%	31.3%	16.1%	11.7%	3.01	1.02
	Sectional Mean = 3.02			Sectional SD = 0.98		

Source: *Field Work 2021*

Table 3 revealed the findings on the responses on the principal administrative effectiveness in using ICT in decision making in Gombe Senior Secondary Schools. The analysis shows that Principals do not wait to use ICT to make decision that require urgent action as suggested by mean score of 3.51 and standard deviation of 0.83.

The findings in the table explained that issues requiring decision by teachers and receiving feedback through the same medium of internet was carried out effectively as supported by 2.94 and 2.88 mean response scores respectively. In the area of making decisions and record them manually than using computer to do it is easier with mean response score of 3.00. Similarly, a mean response score of 2.80 and 3.01 is an indication that using ICT in decision-making

brings a lot of delay as well as decisions reached with staff are stored in the computer respectively. These revelations have however tally with the sectional mean of 3.01 as an indication that principals in Gombe Senior Secondary Schools were more effective in their administration in using ICT in decision making.

Hypothesis 1: There is no significant relationship between access to ICT facilities and principals' administrative effectiveness.

The independent variable in this hypothesis is Access to ICT facilities; while the dependent variable is principals' administrative effectiveness in terms of goal attainment, budgeting and interpersonal relationship. Pearson product moment correlation analysis was employed to test



this hypothesis. The result of the analysis is presented in Table 4.

TABLE 4: Pearson product moment correlation analysis of the relationship between Access to ICT facilities and principals' administrative effectiveness (N=230)

Variables	X	SD	r-value
Access to ICT facilities (X)	18.19	1.48	
Listening measures Y ¹	16.13	2.19	0.88*
Disciplinary measures Y ²	17.48	1.75	0.75*
Supervisory measures Y ³	18.22	1.48	0.80*
Total effectivenessY ⁴	51.83	3.68	0.39*

*Significant at .05 level, critical r = .062, df = 228

The result in Table 5 reveals that the calculated r – values for goal attainment (0.88), budgeting (0.75), interpersonal relationship (0.80) and total administrative effectiveness (0.39) are each higher than the critical r-value of .062 at .05 level of significance with 228 degrees of freedom. With this result the null hypothesis was rejected. This result implies that Access to ICT facilities has a significant relationship with principals' administrative effectiveness.

Hypothesis 2: There is no significant relationship between ICT usage in communication process and principals' administrative effectiveness. The independent variables involve in this hypothesis is ICT usage in communication process, while the dependent variable is principals' administrative effectiveness in terms of goal attainment, budgeting and interpersonal relationship. Pearson product correlation analysis was employed to test this hypothesis. The result of the analysis is presented in Table 5.

TABLE 5: Pearson product moment correlation analysis of the relationship between ICT usage in communication process and principals' administrative effectiveness (N=230)

Variables	X	SD	r-value
ICT usage in communication process (X)	18.06	1.17	
Listening measures Y ¹	16.13	2.19	0.65*
Disciplinary measures Y ²	17.48	1.75	0.47*
Supervisory measures Y ³	18.22	1.48	0.40*
Total effectivenessY ⁴	51.83	3.68	0.42*

*Significant at .05 level, critical r = .062, df = 228

The result in Table 1 reveals that the calculated r – values for goal attainment (0.65), budgeting (0.40), interpersonal relationship (0.40) and total administrative effectiveness (0.42) are each higher than the critical r-value of .062 at .05 level of significance with 228 degrees of freedom. With this result the null hypothesis was rejected. This result therefore means that ICT usage in communication process has a significant relationship with principals' administrative effectiveness.

Hypothesis 3: There is no significant relationship between ICT usage for decision making and principals' administrative effectiveness. The independent variables involve in this hypothesis is ICT usage for decision making; while the dependent variable is principals' administrative effectiveness in terms of goal attainment, budgeting and interpersonal relationship. Pearson product correlation analysis was employed to test this hypothesis. The result of the analysis is presented in Table 6.



TABLE 6: Pearson product moment correlation analysis of the relationship ICT usage for decision making and principals' administrative effectiveness (N=230)

Variables	X	SD	r-value
ICT usage for decision making (X)	15.85	2.38	
Listening measures Y ¹	16.13	2.19	0.80*
Disciplinary measures Y ²	17.48	1.75	0.60*
Supervisory measures Y ³	18.22	1.48	0.52*
Total effectiveness Y ⁴	51.83	3.68	0.50*

*Significant at .05 level, critical $r = .062$, $df = 228$

The result in Table 3 reveals that the calculated r – values for goal attainment (0.80), budgeting (0.60), interpersonal relationship (0.52) and total administrative effectiveness (0.50) are each higher than the critical r -value of .062 at .05 level of significance with 228 degrees of freedom. With this result the null hypothesis was rejected. This result therefore means that ICT usage for decision making has a significant relationship with principals' administrative effectiveness.

DISCUSSION OF FINDINGS

The result of this study revealed that access to ICT facilities significantly relate to principals' administrative effectiveness. The findings of the study are in agreement with the view of Adedoyin (2008) also explain that only about 26 people in a thousand had access to cellular phones as at 2003, while only six out of a thousand people had access to the internet in the same year. There has however been some sizeable improvement in access to ICT in very recent times, following the introduction of the Global System of Mobile Communication (GSM) during the second term of President Olusegun Obasanjo's Administration i.e. between 2003 and 2007. The implication of this development in secondary school administration in Nigeria was that if administrators did not have access to these ICT facilities, it would be difficult to apply them on administration.

The result revealed that ICT usage in communication process significantly relate to principals' administrative effectiveness. The findings on this are in line with the view of Onuma (2007) who pointed out that in the school situation; ICT was utilized to enhance effective communication. It was so far the best educational technology medium for passing on information. The utilization of ICT in solving educational

problems could come in various forms. In a related study, Sanbenito in Adedoyin (2008) described ICT as a tool that could be used to assist students in the acquisition of knowledge and "empowers teachers and administrators to stimulate learning more effectively". Clark in Adedoyin (2008) also contended that technology (that is ICT) could be used to improve the way instructional materials were delivered by making instruction more efficient, less expensive and/or more accessible to the people.

The result also showed that ICT usage for decision making significantly relate to principals' administrative effectiveness. The findings are in line with the view of Adedoyin (2008) who was of the view that success in business, government and even private life was largely determined by the quality decisions are made in a bid to choose among competing alternatives. The above variables were the ingredients of a good administration. It was in this direction that Peretomode (2006) also articulated that school administration involved the performance of executive duties; the implementation of policies; and controlling of the day-to-day functional behaviour of the organization in order to attain a set purpose.

Nwankwo (1987) also saw administration as a concept that had to do with a careful and systematic arrangement of resources. Such resources included finance, human and material resources for the achievement of specific objectives of a given organization. The school administrator was by this meaning of administration essentially an organizer and implementers of plans, policies, and programmes directed towards specific educational objectives. This postulation agreed with the writing of Onyene (2007) who asserted that the secondary school principal, for example, took decision concerning



their work, which centred on resource utilization for educational benefits of students, staff and the owner(s) of the school.

CONCLUSION

The study investigated the Relationship between Information and Communication Technology (ICT) Resource Utilization and Principals' Administrative Effectiveness in Public Secondary Schools in Gombe Local Government Area, Gombe State. Based on the findings of the study, it can be concluded that access to ICT infrastructure, ICT usage in communication process, and ICT usage for decision making are significantly related to the principals' administrative effectiveness.

RECOMMENDATIONS

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

- i. The Gombe State government should introduce ICT Programmes in all the secondary schools in the state to improve the access and usage of ICT in schools by both staff and students.
- ii. The State Government should organize workshop for both Principals and teachers from time to time so as to keep them abreast of the new innovation in ICT. This will enable them to be more effective in their administrative responsibilities.
- iii. Teachers at all level should be encouraged to develop positive attitude towards the use of ICT in teaching.
- iv. Government should establish and properly equip ICT training centers in the state with specialized expert in ICT that can be formerly trained teachers at the highly subsidized cost.

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