ACCESS AND USE OF INFORMATION AND COMMUNICATION TECHNOLOGY FOR ADMINISTRATIVE PURPOSES BY INSTITUTIONAL ADMINISTRATORS IN COLLEGES OF EDUCATION IN NIGERIA: AN EXAMPLE OF EMMANUEL ALAYANDE COLLEGE OF EDUCATION, OYO

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Abstract

This study examined the access and use of Information and Communication Technology for administrative purposes by Institutional Administrators in Emmanuel Alayande College of Education, Oyo. The study states the various ICT resources that can be used for effective and efficient institutional administration. The study highlights the role of ICT in institutional administration. A sample of forty five institutional administrators was drawn from the college. A questionnaire tagged "ICT and College of Education Administration" was used to collect the data needed for the study. The instrument solicited for information on the ICT facilities available for administrative purpose in the college, extent of using ICT by institutional administrators' for administrative purpose and their attitude toward ICT usage and administrative effectiveness of college of education administration. The result of the study revealed that there are inadequate ICT facilities in the college which institutional administrators can be used to perform different administrative purposes effectively. Also, the findings showed that the level of ICT usage of the institutional administrators for administrative purposes is very low. The findings also revealed that a significant relationship exists between ICT usage and Administrative Effectiveness of College of Education Administration. However, administrators' gender differences have no influence on their attitude towards ICT usage and Administrative Effectiveness of College of Education Administration. Recommendations are suggested that need assessment should be carried out to facilitate development and deployment of ICT in Colleges of Education and government should look into the issues of funding of education in general and ICT in particular. Also the institutional administrators should be encouraged to be ICT driven so as to boost their productivity.

Key words: Administrator, Administration, College, Education, Gender, ICT and Institution

Introduction

Information and Communication Technology (ICT) has been defined by various scholars from different perspectives. Mueen, Asadullah, Raed & Jamshed (2013) defined ICT to include electronic network-embodying complex hardware and software-linked by a vast array of technical protocol. Ufuophu and Ayobami (2012) observe that the ICTs include internet, satellite, cable data transmission and computer assisted equipment. ICT, however are facilities, tools or resources that could be used to process, store, preserve, access, retrieve and disseminate information with ease. It could be seen as the engine for growth and tool for empowerment, with profound implications for education, change and socio-economic development.

Administration according to Hornby(2002) is perceived as activity done in order to plan, organise and successfully run a business, school or other institution, a process or act of organising the way that something is done. Administration according to Eden (2006) involves planning activities which aim at the fulfilment of the goals of a particular organisation or institution. It calls for the ability of the administrators to make the right decisions to fulfil the required goals. In institutional setting therefore, administration has been extended as a service activity or tool through which the fundamental objectives of the institutional process may be more optimise efficiently when allocating human and material resources as well as to make the best use of existing resources (Liverpool & Jacinta,2013).

Many studies revealed the need for ICT integration into administrative activities of higher education institutions. The various ways of introducing technology in education institution administration are the following (Caroline, 2009):

    i. Sending e-mail notices and agendas to staff, rather than printing and distributing them
    ii. Submission of lesson plans through e-mail
    iii. Foster technology growth by asking parents to write e-mail addresses on medical forms.
    iv. Insist that all teachers create a class Web page
    v. Attend technology conferences to see what other schools are doing, what other lecturers are doing to integrate technology, and what head of departments are doing to encourage the use of technology in their schools and classrooms.
    vi. Admissions through web-enabled services.
    vii. All day-to-day activities of the institution (General Administration)

Christiana (2008) said ICT fosters the dissemination of information and knowledge by separating content from its physical location. This flow of information is largely impervious to geographic boundaries allowing remote communities to become integrated into global networks and making information, knowledge and culture accessible, in theory, to anyone. It is also mentioned that ICT enhances day-to-day management of institutions and the various functional areas in which it could be used are specified below:

    i. Timetabling
    ii. Student admission and Tracking
    iii. Financial Management
    iv. Medical services
    v. Procurement and Store management
    vi. Data distribution and management

Based on the literature review, the three main functional areas of information administration that are of great significance for day-to-day management of higher education institutions was identified as follows:

    i. Student administration
    ii. Staff administration
    iii. General administration

Student administration is an important and integral part of information administration. This involves various activities commencing from the admission process to learning activities till processing of results and performance analysis. The integration of ICT into this process enhances the overall admission activities of higher education institutions by making it more accessible to many (Thomas, 2004). Based on the literature review, the important items identified under this category relates to the automation of admission process through e-media. This includes admission enquiry by students, applying for admissions through electronic media, registration / enrolment using computers, course allotment, and availability of information like timetable / class schedule in electronic form and attendance monitoring / maintenance through e-media. Further it includes the various communications relating to transport, hostel accommodation and other communication to guardians/parents. The integration also helps in expansion of the geographical boundaries for student intake, thus facilitating cross-border higher education.

Staff administration includes recruitment and work allotment of faculty and staff in the institution, their attendance and leave management, and performance appraisal. This also

includes relevant communication to and from the institutions and among peers. Staff administration done through Information and communication technology (ICT) helps in processing of voluminous records in a quick, meticulous, and impeccable manner thereby making data retrieval easier (Thomas, 2004).

In general, a good communication system should also be in place for the overall effectiveness of administration. ICT helps in providing a good communication system in higher education system (Magni 2009). ICT helps in providing timely information to all concerned. Communication could be for internal and external information acquisition and dissemination. It includes communication between the important stakeholders of the system such as sending e-circulars to students, school and staff. The dissemination of information about the institution using e-kiosks is also a very important item to be considered.

A very important part of Information administration is general administration of higher education institutions which includes the various day-to-day activities of the entire system. Through literature reviews, it is evident that the integration of ICT into general administration has brought increased efficiency and optimal resource utilization (Hasan, 2007). The various items classified under this category include usage of electronic media for scheduling of halls and other resources, fee payment, and handling internal and external examination activities in coordination with the school members, all day to-day activities, intra and inter communication etc,.

The dream of any institution in an effective and efficient managerial process is to accomplish their needs and goals. Ohakwe & Okwuanaso (2006) contended that the knowledge of computer application software's such as spreadsheet, excel, computer-aided design and database are important skills which enables institutional administrators in processing relevant data for the governing bodies , institutional agencies for decision making towards quality assurance and transformational development.

Iwu & Ike (2009) categorized the use of ICT into the following for effective and efficient services:

- ➢ **Sensing Technologies:** These equipment gather data and translate them into form that can be understood by the computer, such as scanners, sensors, keyboard, mouse, electronic pen, barcode sensors or readers, touch of digital boards, voice recognition system etc. Institutional administrators could use them for computation and processing of paper work. These sensory technologies gather data to do complex computation very rapidly and accurately. Similarly, institutional administrator could use word processing to draft, revise and produce reports of high quality for presentation without much hard labour, frustration and waste of time.
- ➢ **Communication Technologies:** These are equipment that institutional administrators could use to transfer information from the sources to users. They are capable of overcoming natural barriers to information transfer like speed and distance. These include; facsimile machines (fax), telephone, electronic mail, telecommunication system, teleconferencing, electronic bulletin boards etc.
- ➢ **Display Technologies:** These are output devices that form the interface between sensing, communication and analysing technologies and human user. These include; computer screen, printers, television etc. Every computer in the institution has to be connected to the internet. The office of the institutional administrators is open to the public, to researchers, staff, students and parents wanting information about the institution. They can find all of that information on the internet. This makes the work

easier by reducing the flow of people through the office and improves access to information.

- ➢ **Analysis Technologies:** These are the technologies that help the institutional administrator to investigate of query of data, analysis and in-depth query for answers from simple to complex phenomena in administrative procedures. ICT has changed the way in which institutional administrators collect and analyse data. For instance, the use of Access, excel and other simple applications to collect, store and analyse information. They may also need some sophisticated packages like SPSS (statistical package for the social science). This is to improve the timeliness and volume of information in implementing an institutional management information system.
- ➢ **Storage Technologies:** These technologies facilitate the efficient and effective storage of information in a form that can be easily accessed. They include: magnetic tapes, disks, optical disks, cassettes, flash drive, memory card, zip drive etc.

Based on the above types and use of ICTs, Liverpool & Jacinta (2013) stated the role of ICT in institutional administration as follows:

- ➢ **Organisation of Information:** Institution administrators need to have basic information on students and lecturer flows. For example, categorise data on student/staff by sex, level, state of origin, performance in schools etc. They could used Microsoft Access or Excel to organise data into an easily accessible format and can be easily stored and retrieved from the micro computer.
- ➢ **Computation and Processing of Paper Work:** ICT are used to map out different activities of the academic session such as number of weeks for teaching, conducting of continuous assessment tests, examination periods and when the result could be released to students. Others activities such as stipulated time for teaching practice and student industrial work experience scheme (SIWES). Institutional administrator could use Microsoft Access, Excel or other simple applications to collect and keeps records of events, enhancement of effective happening in the institution, issues out notices of meeting for staff, students and parents.
- ➢ **Enhancement of Effective Communication:** With the installation of computers and internets communication made it easier for the institutional administrator to use telephone, fax and other communication facilities for transforming thoughts, sharing and imparting of information, growing and receiving and understanding of message within a network of independent relationship across international frontiers.
- ➢ **Enhancement of Planning:** Institutional administrator could use ICT to plan and make decisions on the basis of accurate and readily available facts. ICT could be use to plan the budgets of the college expenditure and plans for replacement of both obsolete and repairs of broken down equipment or institutional facilities.
- ➢ **Improvement of Monitoring:** Institutional administrators use microcomputers in monitoring various areas in the institutional system, such as the uses of continuous monitoring and assessment of students learning and achievement in the institution. Campbell & Sellburn (2002) pointed out that ICT can be valuable for storing and analysing data on education indicators, students' assessments, educational, human and material resources and cost and finance.
- ➢ **Managed Instruction:** This is an approach by the institutional administrators to use computer in scheduling courses/subjects, space, installation, inventory and personnel control, recording and reporting attendance, school accounting, storage and retrieval of student information marks management. This is capable of generating the demographic data of students and institutional staff, production of results online,

retrieving on lecture timetable online and enlisting of courses and registration through online.

Literature Review

Angie & Rita (2013) carried out studies to identifying the role of ICT in school administration and the extent of its application by secondary school Principals in the administration in southern eastern states of Nigeria. Their findings showed that the use of ICT in school administration is a necessity and worthwhile venture especially in this era of globalization but the extent of their application in secondary schools is very slow as school administrators are incompetent in handling ICT facilities for effective administration.

On the hand, Lazarus, Jackson, Elizabeth & Jesse (2012) investigated whether there was a significant difference between teachers' and administrators' perceptions on the importance of Information and Communications Technologies (ICT) in secondary school administration and evaluated the extent to which it was used by administrators. The results showed that administrators rated the importance of using ICT in supervision of instruction and in student administration more highly. Also, there was significant difference between the perceptions of teachers and administrators on the importance of ICT use in the following areas of secondary school administration: student administration, general administration and supervision of instruction.

Unachukwu & Nwankwo (2012) studied principals' readiness for the use of ICT in school administration in Anambra state of Nigeria. Their findings showed that majority of secondary school principals are not ready for the use of ICT in school administration and they differ significantly in their levels of knowledge and physical readiness due to location of their schools.

Krishnaveni & Meenakumari (2010) carried studies to identify the various functional areas to which ICT is deployed for information administration in higher education institutions and to find the current extent of usage of ICT in all these functional areas pertaining to information administration. Their findings indicated that current level of usage indicates a clear integration of ICT for managerial or information-based administration in higher education institutions. The study also revealed that demographic factors do not have major impact on information administration in higher education institutions.

Purpose and Objectives of the Study

The purpose of this study is to determine the extent of access and use of ICT of Institutional Administrators in Emmanuel Alayande College of Education, Oyo for administrative purposes. The specific objectives stated as follows:

1. To determine the level of availability of ICT for administrative purposes in Emmanuel Alayande College of Education, Oyo.
2. To determine the level of ICT usage of the institutional administrators for administrative purposes in Emmanuel Alayande College of Education, Oyo.
3. To determine whether the relationship exist between ICT and effective College of Education Administration.
4. To determine whether the gender differences of the institutional administrators in Emmanuel Alayande College of Education, Oyo affect their attitude towards ICT usage and Administrative Effectiveness of College of Education Administration.

Research Questions
The following research questions were formulated to guide the study
1. What is the level of availability of ICT facilities for administrative purposes?
2. To what extent do institutional administrators use ICT for administrative purposes?

Research Hypotheses
In order to find the solution to the problems of this study, the following research hypotheses were formulated to pilot the study:
1. There is no significant relationship between ICT usage and Administrative Effectiveness of College of Education Administration
2. Institutional administrators' gender differences will not significantly influence their attitude toward ICT usage and Administrative Effectiveness of College of Education Administration.

Methodology
The descriptive research design of the survey type was used for this study. The population consisted of all the Dean of Schools; Director of Academic Programmes/Service Units, Assistant Directors, Head of Service/Academic Department and School Officer in Emmanuel Alayande College of Education, Oyo, while the sample consisted of forty five (45) institutional administrators randomly selected from all the category of the institutional administrators available in the college. Four (4) respondents were selected from Dean of Schools, Director of Academic Programmes/Service Units and Assistant Directors respectively. Thirty (30) respondents were selected from Head of service/Academic Department while the remaining three (3) respondents were selected from the school officers making a total of forty five (45) Institutional Administrators.

A questionnaire tagged "ICT and College of Education Administration" validated by research experts in measurement and evaluation was used to elicit information needed from the respondents. The questionnaire was made up of three sections. Section A focused on demographic data. Section B focused on level of availability of ICT facilities for administrative purposes in the college. The section contained twenty (20) items and the response modes are "Yes" and "No". Section C contained thirteen (13) items on extent of using ICT for administrative purposes by the institutional administrators and the response mode are "Never", "Rarely", "Sometimes" and "Always". The face and content validity of the questionnaire was ascertained by experts in Test and Measurement. A sample of twenty respondents was selected apart from the selected sample and the questionnaire was administered on them to carryout test-retest analysis. The reliability coefficient was calculated to be 0.86 using the kunder-Richardson formular21 on the data collected. The questionnaires were personally administered by the researcher on the respondents and this enhanced good and prompt response from the respondents. Data collected was analysed using simple percentage, frequency count, Pearson correlation coefficient and t-test analysis at 0.05 level of significant.

Results

Table 1: Gender response distribution

Gender	Number of respondents	Responses in percentages
Male	27	60
Female	18	40
Total	**45**	**100**

Table 1 shows that most of the respondents 27(60%) are male while 18 representing a percentage of 40% are female. This attributed to the dominance of male among the institutional administrators in the college.

Table 2: Positions/Designation of respondents

Position/Designation	Number of Respondents	Responses in percentages
Dean	4	8.89
Director	4	8.89
Assistant Director	4	8.89
Head of Department/Service Unit	30	66.66
School Officer	3	6.67
Total	**45**	**100**

Table 2 shows that least responses (6.67%) were from school officers and the highest responses (66.66%) were from head of department/service unit. Data from the table above also indicate that 8.89% of respondents were dean, director and assistant director.

Research Question 1: What is the level of availability of ICT facilities for administrative purposes?

Table 3: Level of availability of ICT facilities in the college for administrative purposes

S/N	Response Items	Response	Number of Respondents	Responses in percentage
1	Do you have a computer in your office?	Yes	38	84.4
		No	7	15.6
2	Is your office/department/school connected to the internet?	Yes	0	0.0
		No	45	100.0
3	Do you have an email address?	Yes	43	95.6
		No	2	4.4
4	Do you have electronic media to prepare electronic form of timetable/class schedule in your department/school?	Yes	9	20.0
		No	36	80.0
5	Do you have electronic media to communicate academic details of students to their parents/guardians in your department/school?	Yes	0	0.0
		No	45	100.0
6	Do you have electronic media through which student can apply for admission in the college?	Yes	45	100.0
		No	0	0.0
7	Do you have telephone?	Yes	45	100.0
		No	0	0.0
8	Do you have inter-comm./PBX in your office/department/school?	Yes	0	0.0
		No	45	100.0
9	Do you have fax machine in your office/department/school?	Yes	0	0.0
		No	45	100.0
10	Do you have Radiophone in your office/department/school?	Yes	0	0.0
		No	45	100.0
11	Do you have generating set in your department/school?	Yes	45	100.0
		No	0	0.0
12	Do you have backup equipments in your	Yes	0	0.0

	office/department/school?	No	45	100.0
13	Does the school have any electronic examination management systems/database?	Yes	0	0.0
		No	45	100.0
14	Do you have electronic media to communicate with staff in your office/department/school?	Yes	0	0.0
		No	45	100.0
15	Do you have electronic equipment for automation of attendance and leave management of staff in your office/department/school?	Yes	0	0.0
		No	45	100.0
16	Do you have electronic media for performance appraisal in your office/department/school?	Yes	0	0.0
		No	45	100.0
17	Do you have e-circulars for the institution regarding official matters in your office/department/school?	Yes	0	0.0
		No	45	100.0
18	Do you have electronic media for scheduling/allocation of halls for examination in your office/department/school?	Yes	0	0.00
		No	45	100.0
19	Do you have e-kiosks in your office/department/school?	Yes	0	0.0
		No	45	100.0
20	Do you have facility for students to make fee payments electronically in your department/school?	Yes	5	11.1
		No	40	89.9

Table 3 shows that computer (84.4%), email address (95.6%), electronic admission system (100.0%) and mobile phone (100.0%) are the ICT facilities available for the institutional administrators in the college. While the majority of the ICT facilities are not available at all such as internet connectivity (0.0%), electronic media to communicate academic performance of the students to their parents (0.0%), fax machine (0.0%), intercom (0.0%), radiophone (0.0%), e-circulars (0.0%).

Research Question 2: To what extent do institutional administrators use ICT for administrative purposes?

Table 4: **Extent of using ICT for administrative purposes by institutional administrators**

S/N	Response Items	Never	Rarely	Sometimes	Always
1	Using computer for student registration/enrolment and for maintenance of attendance of the students	37 (82.2%)	7 (15.6%)	1 (2.2%)	0 (0.)%
2	Using internet for administrative purpose	41 (91.1%)	3 (6.7%)	1 (2.2%)	0 (0.0%)
3	Sending of SMS messages to communicate with both staff and students	0 (0.0%)	4 (8.9%)	14 (31.1%)	27 (60%)
4	Sending emails messages for official work	0 (0.0%)	6 (13.3%)	32 (71.1%)	7 (15.6%)
5	Using electronic media to communicate academic details of students to their parents/guardians	45 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
6	Using electronic media to prepare electronic form of timetable/class schedule	36 (80.0%)	7 (15.6%)	2 (4.4%)	0 (0.0%)

7	Using electronic equipment for automation of attendance and leave management of staff	45 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
8	Using electronic media for performance appraisal	45 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
9	Using e-kiosks for dissemination of information	45 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
10	Using electronic media for the processing and display of students' results	39 (86.7%)	2 (4.4%)	4 (8.9%)	0 (0.0%)
11	Using electronic media for scheduling/allocation of halls for examination	45 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
12	Using e-circular for dissemination of official matters in the institution	45 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
13	Using computer for staff recruitment and work allotment of staff	45 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)

Table 4 shows that institutional administrators were never used ICT facilities to performs 7 items (i.e. items 5,7,8,9,11,12,13) out of thirteen items responses. The number of institutional administrators that never used ICT facilities to performs items 1, 2, 6, and 10 are 37 (82.2%), 41 (91.1%), 36 (80.0%) and 39 (86.7%) respectively. While 27 (60.0%) of the institutional administrators indicate that they always used ICT facilities to send SMS messages to communicate with both staff and students while 14 (31.1%) indicate that they sometimes used ICT facilities to send SMS messages to communicate with both staff and students. Also, 7 (5.6%) of the institutional administrators indicate that they always used ICT facilities to send emails messages for official work while the majority 32(71.1%) indicate that they sometime used ICT facilities to send emails messages for official work.

Hypothesis 1: There is no significant relationship between ICT usage and Administrative Effectiveness of College of Education Administration

Table 5: Pearson Correlation of Relationship Between ICT Usage and Administrative Effectiveness of College of Education Administration

		ICT Usage	Administrative Effectiveness
ICT Usage	Pearson Correlation	1	.411[**]
	Sig. (2-tailed)		.005
	Sum of Squares and Cross-products	24.800	6.867
	Covariance	.564	.156
	N	45	45
Administrative	Pearson Correlation	.411[**]	1

effectiveness	Sig. (2-tailed)	.005	
	Sum of Squares and Cross-products	6.867	11.244
	Covariance	.156	.256
	N	45	45

**. Correlation is significant at the 0.01 level (2-tailed).

Table 5 shows the Pearson correlation of relationship between ICT usage and Administrative Effectiveness of College of Education Administration. The result (0.411) obtained from the analysis shows the correlation is significant at the 0.01 level of significance.

Table 6: Test for Significance of the Pearson Correlation of the Relationship between ICT Usage and Administrative Effectiveness of College of Education Administration

Item	N	t-cal	t-table
ICT Usage	45	**2.96**	1.98
Administrative Effectiveness	45		

P<0.05

Table 6 shows the relationship between ICT usage and administrative effectiveness of College of Education Administration. The result obtained from the analysis shows that the value of t-calculated (2.96) is greater than t-table (1.98) at 0.05 level of significance. Therefore, the null hypothesis is rejected. That is, there is significant relationship between ICT usage and administrative effectiveness of College of Education Administration.

Hypothesis 2: Institutional administrators' gender differences will not significantly influence their attitude toward ICT usage and administrative effectiveness of College of Education Administration.

Table 7: T-test Analysis showing influence of Institutional Administrator Gender Difference on their Attitude toward ICT Usage and Administrative Effectiveness of College of Education Administration

Variable	N	Mean	Standard Deviation	DF	T-cal	T-tab
Male	27	2.73	0.751	43	0.789	**1.98**
Female	18	1.49	0.506			
Total	**45**					

Table 7 showed the influence of institutional administrators' gender on their attitude toward the ICT usage and administrative effectiveness of college of education administration. The value of t-calculated (0.789) is less than t-table (1.98) at 0.05 level of significance. The null hypothesis is hereby accepted. Therefore, the findings showed that the institutional administrator attitude towards ICT usage and administrative effectiveness of college of education administration is not as a result of their gender difference.

Discussion

The result in table 3 showed that ICT facilities are not adequately available in the College. This position is line with Olayemi & Omotayo (2012) findings that secondary school in Ekiti State are not well equipped with adequate ICT facilities. The findings also indicated that the extent to which institutional administrators used ICT facilities for administrative purposes is

very low. The reason for this result may be due to the fact that government does not provide adequate ICT facilities to the College of Education.

It was also found out in the study that significant relationship exists between ICT usage and administrative effectiveness of College of Education Administration. It could be inferred from the result of the tested hypothesis that ICT will among others things facilitate effective administration and management of activities and processes. This study is in agreement with Uwadia (2009), Olayemi & Omotayo (2012) that ICT will among others serve as a tool for increased productivity, act as a tool for information storage, processing and retrieval and increase decision-making.

Finally, findings of this study indicated that administrators gender difference have no influence on their attitude towards ICT usage and administrative effectiveness of College of Education Administration. This finding is line with Olayemi &Omotayo (2012) findings that administrators' gender differences have no influence on their attitude towards ICT and effective Secondary School Administration.

Conclusion and Recommendation
From this study, it could be concluded that many institutional administrators in the college understudied are not ICT driven and government on its own part also failed to provide ICT facilities in the College of Education. The gender of a institutional administrator also has no bearing on his/her use of ICT facilities and effective College of Education Administration. Based on the findings of the study, the following suggestions are recommended:
   i.   Adequate provision of ICT facilities should be made into the college of education by the government.
   ii. Institutional Administrators should be encouraged to be ICT driven so as to boost their productivity.
   iii. Government should create ICT awareness and effective training of the institutional administrators.
   iv. Government should carry out needs assessment to facilitate development and deployment of ICT in college of education.
   v.   Emphasis should be made on the policies that will promote the use of ICT for administrative purposes in Colleges of Education.

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