

## Information and Communication Technology and Administrative Effectiveness of Nigerian Distance Education

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### Abstract

*The study investigated the relationship between Information and Communication Technology (ICT) and administrative effectiveness of Nigerian distance education. A correlational study was adopted. Stratified random sampling technique was used to select 300 respondents ranging from the directors, state coordinators, study centres managers and supervisors. Test re-test reliability was used to determine the reliability index of the Information and Communication Technology Questionnaire (ICTQ) and Distance Education Administrative Effectiveness Questionnaire (DEAEQ) instruments. Pearson Product Moment Correlation and t-test statistics were used to determine the correlation coefficient and differences between the dependent and independent variables in the hypotheses formulated. The findings revealed that information and communication technology is significantly related to administrative effectiveness of distance education and that there is no significant difference in the utilization of information and communication technology in conventional institutions and distance education. It was recommended that more efforts should be geared towards the provision of adequate Information and Communication Technology (ICT) equipment to Nigerian distance educational institutions. Every centre coordinator should be trained in computer skills in particular and information and communication technology in general in order to enhance their administrative effectiveness*

### Introduction

Distance education has become a popular programme in Nigerian educational system. This programme is inevitable in the country because of the low capacity of the conventional institutions to give admission to a tangible number of candidates that have graduated from the secondary

schools. Okebukola (2000) observed that out of 700, 000 qualified secondary school leavers seeking admission into Nigerian universities in 1999, only 300,000 were given admission. In recent times therefore, distance education is growing rapidly and admitting greater numbers of students to complement the efforts of the conventional institutions in students' admission.

Avalos (1991) described distance education as a teaching – learning process or system in which the teachers and learners are physically separated for some or all of the time, and where learning materials take on some of the roles of the traditional teachers. Dare (2007) made an analysis of distance educational modular method and forms. He noted that, distance education in Nigeria has taken broad forms either parallel to the existing conventional institution or integrated with it in line with parallel forms. Belgore (2008) also stated that distance learning education is provided as an alternative to the conventional institutions. He observed that distance education utilized the conventional college facilities and the personnel on part-time basis. Under this mode, the learners would not abandon their working place; they would study given materials at their own pace. They have face-to face interaction with course tutors at study centres during the vacations. Belgore (2008) also noted that since the distance education programme has also been incorporated into the main stream of the institutions, the students would therefore alternate the time spent in the schools and complement this with the self – study materials and tutorials.

Obemeata (1995) however mentioned the operational characteristic of distance education as:

Separation of teachers and learners which distinguishes distance education from the face –to – face system of learning. There is influence of educational organization which differentiates it from private studies. Also, there is the use of technical media usually printed for teachers and learners. There is also the provision of a two-way communication mode so that students would benefit from their teachers or even initiate dialogue (p.25).

Based on the operational characteristic and the high recognition being accorded Nigerian distance education, there is the need to adopt effective information and communication technology, so that the system of administration of that type of education would be more effective.

Information and communication technology has become a global issue that connects every citizen to other citizens in the world. Nigeria as a nation is developing technologically with the use of information and communication technology in the various realms of affairs including

education. Information and communication technology is a veritable tool in the administration of Nigerian distance education. Therefore the rationale for this study is to investigate the influence of information and communication technology on the administrative effectiveness of Nigerian distance education.

#### **Statement of Problem**

In recent times, distance education has been accommodating many learners in Nigeria. The situation of interconnectivity of the teachers and the learners in the global world has made the use of information and communication technology to become an essential tool for administrative effectiveness in distance education. Basically the problem of the study is to investigate the available types, utilization strategies and effectiveness of information and technology in the operation of Nigerian distance education programmes.

#### **Purpose of study**

The study aimed at investigating the influence of information and communication technology on the administrative effectiveness of Nigerian distance education.

The study also seeks to:

- i. examine the administrative practices of Nigerian distance education programme
- ii. investigate the available types of information and communication technology used in the administration of Nigerian distance education
- iii. find out the modern information and communication technology that are utilized for effective administration of Nigerian distance education.
- iv. examine the role of educational administrators in improving information and communication technology for distance education

#### **Research hypotheses**

The following null hypotheses were generated to guide the study:

Ho<sub>1</sub>: There is no significant relationship between information and communication technology utilization and administrative effectiveness in Nigerian distance education

Ho<sub>2</sub>: There is no significant relationship between information and communication technology utilization and lecturers' job performance in Nigerian distance education.

- Ho<sub>3</sub> There is no significant relationship between information and communication technology utilization and students' academic performance in Nigerian distance education.
- HO<sub>4</sub>: There is no significant difference between the academic performance of students in distance education and in conventional institutions.
- HO<sub>5</sub>: There is no significant difference in the utilization of information and communication technology in Nigerian distance education and in conventional institutions.

### **Research Method**

This study is a descriptive survey of a correlational type. It attempts to investigate the relationship between the utilization of information and communication technology and administrative effectiveness in Nigerian distance education. The independent variable is information and communication technology while administrative effectiveness of distance education is the dependent variable. The survey method is appropriate for this study because the study examined the effectiveness of the available information and communication technology as it influences the administrative effectiveness of distance education in Nigeria.

### **Sample and Sampling Technique**

The population sampled for this study focused on the National Teachers Institute (NTI) and all conventional higher institutions that have incorporated distance education programmes into their system. Stratified random sampling technique was used to select 30 National Teachers' Institute (NTI) study centres and 10 conventional higher institutions that have incorporated distance education programme into their system. The study focused on the north-central zone of Nigeria. A total of 300 respondents from the selected study centres and the 10 conventional higher institutions were randomly picked as the sample. Directors of the institute, state coordinators, study centre managers and centre supervisors were also included in the sample.

### **Research Instrument**

The Information and Communication Technology Questionnaire (ICTQ) and Distance Education Administrative Effectiveness Questionnaire (DEAEQ) were the self-designed instruments used for data collection. The Information and Communication Technology Questionnaire (ICTQ) was used to elicit information on the type, availability and utilization of information and communication technology while the Distance Education

Administrative Effectiveness Questionnaire (DEAEQ) was used to elicit information on distance education administrative effectiveness with regard to lecturers' job performance, institutional discipline, students' academic performance and research publication. Three years' (2005-2007) seasonal results were collected to determine the success rate of distance education students.

**Validity and Reliability of the Instrument**

Construct and content validity of the instrument were assured through comments and criticisms from experts in distance education. The test re-test reliability method was used to determine the reliability of the instruments. The scores of the test re-test method were correlated using Spearman Ranking Order statistics. The reliability coefficients of 0.72 and 0.81 were obtained for ICTQ and DEAEQ respectively.

**Data Analysis and Results**

The Statistical Package for Social Sciences (SPSS) computer programme was used to analyse the data collected. The formulated hypotheses were analyzed using Pearson Product Moment of Correlation statistics to determine the relationship that exists between Information and Communication Technology (ICT) and administrative effectiveness in Nigeria distance education, while the t-test statistical method was used to examine the significant differences that exist between ICT and administrative effectiveness in distance education programmes and the programmes in conventional institutions. All the hypotheses were tested at 0.05 significance level. The results of the study are presented below:

Ho<sub>1</sub>: There is no significant relationship between information and communication technology utilization and administrative effectiveness in Nigerian distance education.

*Table 1: Correlational analysis of ICT utilization and administrative effectiveness in Nigerian distance education programmes.*

Variable	N	$\bar{X}$	SD	Df	Calculated r - value	Critical r - value	Decision
ICT utilization	300	17.30	4.33				Ho <sub>1</sub> rejected
Administrative Effectiveness	300	16.48	5.67	299	0.272	0.195	

Table 1 shows that the calculated r- value of 0.272 is greater than the critical r- value of 0.195 at 0.05 level of significance and 299 degree of

freedom. Thus, the hypothesis which states that there is no significant relationship between information and communication technology utilization and administrative effectiveness in Nigerian distance education programme was rejected. This implies that there is low positive relationship between the utilization of information and communication technology and administrative effectiveness in Nigerian distance education. Although Nigerian distance education utilizes the few available information and communication technology such as modular method, fax, GSM, e-mail, radio and television, CD-Rom, they are merely used to reach all the study centres through their state offices in Nigeria.

Ho<sub>2</sub>. There is no significant relationship between the available information and communication technology utilization and lecturers' job performance in Nigerian distance education.

**Table 2:** Utilization of the available ICT and lecturers' job performance in distance education.

Variable	No	$\bar{X}$	SD	Df	Calculated r-value	Critical r-value	Decision
Available ICT	300	17.20	4.33		<b>10</b>		
Lecturers job performance	300	19.71	4.96	299	0.421	0.195	Ho <sub>2</sub> rejected

Table 2 shows that the calculated r-value of 0.421 is greater than the critical r – value of 0.195 at 0.05 level of significance and 299 degree of freedom. Thus, the hypothesis which states that there is no significant relationship between the utilization of the available information and communication technology and lecturers' job performance in Nigeria distance education was rejected. The implication is that there is a significant relationship between the utilization of the available information and communication technology and lecturers' job performance in Nigerian distance education.

Ho<sub>3</sub>. There is no significant relationship between information and communication technology utilization and students' academic performance in Nigerian distance education.

Table 3: Utilization of the available information technology and students academic performance in Nigerian distance education programmes.

Variable	N	$\bar{X}$	SD	DF	Calculated r – value	Critical r- value	Decision
ICT Utilization	300	17.20	4.33	299	0.532	0.195	H <sub>0</sub> <sub>3</sub> rejected
Student Academic performance	300	16.44	5.63				

Table 3 indicates that the calculated r – value of 0.532 is greater than the critical r –value of 0.195 at 0.05 significance level and 299 degree of freedom. Thus ,the hypotheses which states that there is no significant relationship between the utilization of the available information and communication technology and students’ academic performance in Nigerian distance education programme was rejected. This implies that there is significant relationship between the utilization of the available ICT and students’ academic performance.

The findings show that though the level of the available information and communication technology system used in distance education programmes is low, there is a high success rate in the students’ academic performance. The results support the opinions of Fasiku (2007), which stated that accurate information is not absolute, it is relative. Accurate information however is very expensive to generate and process. Thus, many of the operators of distance education in Nigeria find it difficult to install computerized information technology in their study centres due to cost of the materials.

H<sub>0</sub><sub>4</sub>: there is no significant difference between the academic performance of students in distance education and in conventional institutions.

Table 4: Comparative analysis of students’ academic performance in distance education programmes and the conventional institutions.

Group	N	$\bar{X}$	SD	DF	Calculate d t-value	Critica l t-value	Decision
Distance education	15	21.7	2.9	29	1.73	1.98	H <sub>0</sub> <sub>4</sub> accepted
Conventional institutions	15	21.3	1.6				
	0	2	6				

Table 4 shows that the calculated  $t$ -value of 1.73 is less than the critical  $t$ -value of 1.98 under the degree of freedom 298. Therefore, the hypothesis which states that there is no significant difference in the academic performance of students in distance education programmes and those in the conventional institution was however not rejected. The implication is that the academic performance in both types of programmes is relatively the same.

The result is in line with the reaction of Adedoyin (2003) when he commented that out of 10,000 candidates that were interviewed for teaching appointment in Kwara State, only 600 candidates could defend their areas of specialization. It was observed that the candidates interviewed were drawn from both the conventional institutions and distance education programmes. The results of the study buttressed the fact that there is no significant difference in their academic performance.

$H_{05}$ : There is no significant difference in the utilization of information and communication technology in Nigerian distance education and in conventional institutions

**Table 5:** Comparative analysis of utilization of information and communication technology in distance education programmes and conventional institutions in Nigeria.

Group	N	$\bar{X}$	SD	DF	Calculate d t - value	Critical t- value	Decision
Distance education	15	119.3	23.1	29	3.99	19.8	$H_{05}$ rejected
Convention al institutions	15	312.7	39.8	8			

Table 5 indicates that the calculated  $t$ -value of 3.99 is greater than the critical  $t$ -value of 1.98. Therefore, the null hypothesis which stated that there is no significant difference in the utilization of information and communication technology in Nigerian distance education programmes and conventional institutions was rejected. This means that a significant difference exists in the use of information and communication technology in both distance education programme and conventional institutions.

Dare (2007) observed that distance education depended mainly on letter writing, radio, memos, telephone e-mail and the internet to disseminate necessary information to the students and among the study centres of distance education in Nigeria. The implication of the finding for



this hypothesis is that distance education programmes make more use of information and communication technology facilities than the conventional institutions.

#### Discussion

It is clear from the findings of this study that there is significant relationship between Information and Communication Technology (ICT) and administrative effectiveness of Nigerian distance education. The level of the use of information and communication technology in the operation of Nigerian distance education is still low. The administrators still use the modular course materials to disseminate information to the lecturers and the students. The use of electronic machine and computerized information technology is grossly inadequate in distance education programmes. The lecturers in the distance education merely utilize the available information methods such as telephone, fax and e-mail during teaching-learning processes. There is a slow rate of acceptance of communication technology in most of the distance education centres. This is in line with the opinion of Belgore (2008), that 90% of Nigerian distance education centres do not have computers nor internet connectivity. Some of the centre lecturers do not have e-mail. Belgore stated that the modular course materials are distributed at the designated centres through the centre coordinators. He stressed further that the use of electronic computerized mode of information technology in Nigerian distance education is yet to gain popularity.

#### Conclusion

Based on the analysis of data collected, it could be concluded that there is low significant relationship between the use of information and communication technology such as communication video displays, data transmission network, internet, telex and pagers used for information dissemination. The study also revealed that, there is significant difference in the academic performance and utilization of information communication technology in Nigerian distance education programmes and conventional higher institutions.

Finally, separation of lecturers and students, administrators and coordinators in space and time call for effective utilization of modern information and communication technology in the study centres, so that there can be administrative effectiveness in Nigerian distance education.

### Recommendations

Based on the findings of this study, the following recommendations are made:

- installation of Information and Communication Technology facilities into Nigerian distance education study centres:

Government of Nigeria, in conjunction with those institutions charged with coordinating distance education should as a matter of urgency install in the study centres the necessary Information and Communication Technology facilities (ICT) in order to enhance administrative effectiveness.

- Training and retraining of distance education centre coordinators and facilitators on the use of modern ICT:

There is the need to organize national conferences, seminars, and workshops on a regular basis on the use of modern communication technology for effective administration in Nigerian distance education.

- incorporation of information and Communication Technology training into distance education programmes:

Distance education programmes and conventional institutions should incorporate the training on information and communication technology into their programmes so as to promote quality assurance in the educational system.

- The use of information and communication technology by programme coordinators should be encouraged.

Distance education programme coordinators should make use of micro-electronic media such as e-mail, fax, telephone, CD-ROM, etc. so as to reduce the cost and size of routine work in the study centres thereby enhancing administrative effectiveness.

- Opening of e-mail accounts by both students and the lecturers in the study centres:

Every study centre manager and facilitator as well as the students should be encouraged to have their own e-mail accounts in order to ensure effective information dissemination.

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