Access And Use Of Information And Communication Technology (ICT) For Administrative Purposes By Principals Of Government Secondary Schools In Nigeria

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Abstract: The study investigated the access and use of information and communication technology for administrative purposes by Principals of Government Secondary Schools in Imo State, Nigeria. The survey method was used for the study. Data for the research work was collected with the use of questionnaire, which was administered to the Principals of Government Secondary Schools in Imo State of Nigeria. The instrument solicited for information on the principals' access and use of selected ICT for administrative and managerial duties. Simple random sampling technique was used to select 130 principals out of the 621 Principals. Findings revealed that majority of the Principals never used the broadcast/audiovisual and telecommunication/computer technologies for administrative purposes. Furthermore, findings also showed that majority of the principals used print technology for various administrative purposes. The study therefore recommended that needs assessment be carried out to facilitate development and deployment of ICT in secondary schools. It also recommended that the government should look into the issues of funding of education in general and ICT in particular. [Researcher. 2010;2(1):43-50] (ISSN:1553-9865)

Key words: ICT, School administration, Nigeria, Access and use of ICT

1. Introduction

The purpose of teaching is primarily to assist the learner acquire the type of knowledge and skill that will produce desirable change in him. This can be actualized if the teaching and learning process provides the enabling environment for the learner to think critically and analytically and consequently, be an agent of change. Generally, the educational system is subdivided into the primary, secondary and tertiary levels. In some cases, the pre-primary education is an integral part of the primary level. The secondary level occupies a critical position in the educational system. According to FRN (2004, p.18), "secondary education is the education children receive after primary education and before the tertiary stage. The broad goals of secondary education shall be to prepare the individual for useful living within the society and higher education".

To achieve the stated goals, secondary education shall be of six years duration, given in two stages: - a junior secondary school stage and a senior secondary school stage; each shall be of three years duration. The achievement of the above stated goals is dependent on the extent the secondary school principal who is the chief executive officer in the school is capable of applying the appropriate administrative processes in the school operations. 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 inputs 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.

Put succinctly the administrative functions of the principal are decision making, planning, organizing, communicating, influencing, coordinating and evaluating. These tasks are applied in the areas of curriculum development, instructional supervision, staff and student personnel administration, guidance and counselling, finance, community relations, construction and maintenance of facilities, special services. These tasks are very complex, nebulous and time consuming. For the principal to function efficiently and effectively in the present computer age, he/she must rise to the challenge of adopting new technological resources and services in the management of the

school. According to Moore (1992) 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. Ward (1995) 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 carry out those processes, changing them, eliminating the need for some of them and enabling new processes to be developed, have made the management of (IS) a subject needing specific attention.

Over the years, the administrative work of the principal is print-based. Various documents are kept in the form of records. These records provide information on the past, present and anticipated future activities of the school including relevant information from the external environment, which aid decision-making. The information kept are in the areas of instructional programmes and activities, staff and students personnel services, physical facilities, finance, supervision and interaction with stakeholders outside the school. The principal cannot perform his 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 managerial processes very cumbersome. Consequently, alternative methods provided by Information and Communication Technology (ICT) became very imperative. The ICT is technology-based and knowledge-driven and is indispensable in the present age. Vernon (2001) stated that ICT is a collective term covering all those technologies, both hardware and software, dedicated to the capture, storage, and processing, transmission, and presentation of information. The use of ICT in all spheres of human activities has changed the face of the earth. It is used in health delivery, engineering, industry, business, and agriculture, military, security, law, politics and governance, all aspects of arts, science and education among others. According to Hawkridge, Jaworski and McMahon (1990) computers are at the heart of the ICT revolution because they are fast information processing machines, configured to receive input in the form of information, systematically process the input and provide

organized information that serve the needs of the user. It has the advantage of improving administrative efficiency and overall quality of the teaching and learning process.

Akinyemi (1988) stated that computers used in education are in the form of Computer Managed Instruction (CMI), Computer supported learning Aids (CSLA), Computer Based Education (CBE) and the Computer Assisted Instruction (CAI). He further emphasized that in computer managed instruction, the computer is used for data processing which facilitates decision making for effective administration, classroom management and individual student management, generation, marking, and analyzing tests, grading, diagnosis and the monitoring of the learners progress, improves efficiency and productivity of information, performs intensive tasks, carries out repetitive tasks and stores large volumes of data and information. Nwidum (2006) listed ICT in education as motion picture or film, film strip, slide projection, overhead transparency, teletext and video text, the reprographic media are photography, photocopying, scanning and faxing microchips, microfilms and microfiche, voice mail, voice processing, the computer, the internet; multimedia systems are for example computer-based training (CBT), Computer Disc-Read Only Memory (CD-ROM), Compact Disc Interactive (CD-I). Digital Video Interactive (DVI), Interactive Processing Information Services.

For the purposes of this study, the following ICT will be used; Projector, TV Camera, Video Recordings, Radio Programmes, Media Van, Cinema, TV Programme, Telephone, Inter-comm/PBX, Fax, E-mail facility, CD-ROM, Radiophone/ceptron, Internet facility, Graphic Information System (GIS), Computer, Newsletter, Research bulletin, Leaflets, Posters, Calendar of Work, Diaries, Annual Reports, Journals, Newspapers, and Magazines. In view of the importance of ICT in the performance of administrative duties, it is therefore necessary to determine the extent the Principals have access the selected ICT. Access refers to the ways and means in which individuals, communities and institutions are exposed to ICT. It takes into consideration such elements as affordability, availability of the technologies, geographical location of the access point, and the times at which the technologies are available.

2. Objectives of the Study
The purpose of this study was to determine the extent of access and use of ICT for administrative purposes by Principals of Government owned Secondary Schools in Imo State, Nigeria.

The specific objectives were as follows:
a. To ascertain the extent principals have access to broad cast technology, audio-visual technology, telecommunication technology and print technology for administrative purposes.
b. To determine the extent principals use the selected ICT for administrative purposes.

3. Methodology
The survey method was used for the study. Data for the research work was collected with the use of questionnaire, which was administered to the Principals of Government-owned Secondary Schools in Imo State of Nigeria. The instrument solicited for information on the principals' access and use of selected ICTs for administrative duties.

The population of the study comprised of all the six hundred and twenty one principals of government owned secondary schools in Imo State. Simple random sampling technique was used to select 130 principals out of the 621 Principals in Imo State.

4. Results and Discussion
4.1 Socio-economic Characteristics of the Principals (N=130)
Table 1 showed that 42.31% of the respondents were male principals while 57.69% were female principals. This shows that in Imo State majority of the principals are females. This is a reflection of the fact that there are more female teachers in the school system than male teachers. Findings showed that no principal in Imo State was less than 45 years, 30% of the principals were between 45 years and 49years while the rest were 50years and above. The table also showed the distribution of the principals according to their highest educational qualification. Results showed that 50.77% have Bachelors degrees, 42.31% have Masters degrees, while 6.92% have doctorate degrees. Findings revealed the distribution of respondents according to years of experience as principal. This indicated that 11.54% had less than one year experience as principal, 13.85% had 1-5 years experience, 38.46% had 6-10 years, 20% had 11-15 years experience, 10% had 16-20 years experience while 6.15% had 21 years experience and above.

Table 1: Socio-economic Characteristics of the Principals (N=130)

Variable	Frequency	Percentage
Gender		
• Male	55	42.31
• Female	75	57.69
Educational Qualification		
• Bachelors degree	66	50.77
• Masters degree	55	42.31
• Doctorate degree	9	6.92
Area of Specialization		
• Social science		
• Arts	15	11.54
• Sciences	25	19.23
• Education	44	33.85
• Humanities	35	26.92
	11	8.46
Years of Experience as Principal		
• 1-5		
• 6-10	15	11.54
• 11-15	18	13.85
• 16-20	50	38.85
• 21-25	13	10.00
	8	6.15
Total	130	100

Source: Survey Data

4.2 Use of Broadcast/Audiovisual Technology for Administrative Purposes

Table 2 shows that 69.23% of the principals stated that the projector was never used in their schools for administrative purposes, 18.46% used it rarely, 12.3% used it sometimes, while none of the principals stated that it is always used in their schools. Results also showed that 71.54% of the principals stated that the TV camera is never used in their schools, 24.62% stated that it was used rarely, 4.1 percent stated that it is always used. 59.23% never used the video recorder, 21.54% used it rarely, 19.23% used it sometimes, none of the principals used it always. Findings further revealed that 61.54% never used radio programmes for educational purposes, 11.54% used it rarely, 19.23% used it sometimes while 7.7% stated that they use it always. About 89.6% never used media van, 7.2% used it rarely, 3.2% used it sometimes while none of the principals used it always. Results showed that 75.83% never used the cinema, 14.17% used it rarely, 10 percent used it sometimes while none of the principals used it always. Additionally, 68.33% used TV programmes for educational purposes, 20.83% used it rarely, 7.5% used it sometimes while 3.33% used it always. A summary of the responses showed that the majority of the principals never used Broadcast/ Audiovisual technology for administrative duties.

Table 2: Use of Broadcast/Audiovisual Technology for Administrative Purposes

A	Broadcast/Audiovisual Technology	Never	Rarely	Sometimes	Always
1	Projector	90(69.23)	24(18.46)	16(12.3)	__
2	TV Camera	93(71.54)	32(24.62)	54.17	__
3	Video Recordings	77(59.23)	28(21.54)	25(19.23)	
4	Radio Programmes	80(61.54)	15(11.54)	25 (19.23)	10(7.7)
5	Media Van	112(89.6)	9(7.2)	4 (3.2)	__
6	Cinema	91(75.83)	17(14.17)	12 (10)	__
7	TV Programme	82(68.33)	25(20.83)	9 (7.5)	4(3.33)

Source: Survey Data. Percentages are in parenthesis

4.3 Use of Telecommunication/Computer Technology for Administrative Purposes.

Table 3 reveals that 27.87% of the principals stated that telephone were never used in their schools for administrative purposes, 9.02% used it rarely, 13.95% used it sometimes, while 49.18% used it always. Findings indicated that 79.13% never used intercom for administrative duties, 8.7% used it rarely, 12.17% used it sometimes while no principal indicated that it is used always. Majority (95.45%) never used fax, 4.5% used it rarely, no principal indicated using it sometimes or always. Most (67.27%) never used e-mail facility for administrative duties, 20.91% used it rarely, 4.55% used it sometimes while 9.27% used it always. Findings also revealed that 84.44% never used the CD-ROM for administrative duties administrative duties, 5.56% used it rarely, 10% used it sometimes while no principal used it always. An additional 83% never used radio phone/ceptron, 12% used it rarely, 5% used it sometimes while none used it always. Most (74.55%) indicated that they never used internet facility, 16.36% used it rarely, 4.55% used it sometimes while 4.55% used it always. Majority (88.89%) indicated that they never used the Geographic Information System (GIS), 8.3% used it rarely, 2.78% used it sometimes while none indicated using it always. Results further indicated that 34.78% indicated that they never used the computer, 21.74% used it rarely, 26.09% used it sometimes while 17.39% used it always. This shows that except the telephone, majority of the principals never used telecommunication/computer facilities for administrative purposes.

Table 3: Use of telecommunication/computer technology for administrative purposes.

B	Broadcast/Audiovisual Technology	Never	Rarely	Sometimes	Always
1	Telephone	34(27.87)	11(9.02)	17(13.93)	60(49.180
2	Inter-comm/PBX	91(79.13)	10(.87)	14(12.17)	
3	Fax	105(95.45)	5(4.5)		
4	E-mail facility	74(67.27)	23(20.91)	5(4.55)	8(7.27)
5	CD-ROM	76(84.44)	5(5.56)	9(10)	
6	Radio phone/ceptron	83(83)	12(12)	5(5)	
7	Internet facility	82(74.55)	18(16.36)	5(4.55)	5(4.55)
8	GIS (geographic Information System	96(88.89)	9(.83)	3(2.78)	
9	Computer	40(34.78)	25(21.74)	30(26.09)	20(17.39)

Source: Survey Data. Percentages in parenthesis

4.4 Use of Print Technology for Administrative Purposes by Principals.

Table 4 showed that 40% of the principals indicated that they never used newsletter for administrative purposes, 22.4% used it rarely, 26.4% used it sometimes while 11.2% used it always. For research bulletin, 43.70% never used it, 29.41% used it rarely, 24.37% used it sometimes while 15.79% used it always. Results showed that 55.26% never used leaflets, 17.54% used it rarely, 20.06% used it sometimes while 6.14% used it always. 29.23% never used posters, 7.69% used it rarely, 52.63% used it sometimes while 16.92% used it always. Only 6.92% never used calendar of work, 3.85% used it rarely. 23.85% used it sometimes while 65.38% used it always. Another 5.6% indicated that they never used diaries, 3.2% used it rarely,

30.4% used it sometimes while majority (60.8%) used it always. Findings also showed that 16.67% indicated that they never used annual report, 7.14% used it rarely, 20.63% used it sometimes while 55.56% used it always, 15.38% used journal, 13.85% used it rarely, 55.38% used it sometimes while 15.38% used it always. Only 6.15% never used newspapers, 17.69% used it rarely, 61.54% used it sometimes, 14.62% used it always. Only 3.10% never used magazine, 17.83 percent used it rarely, 57.69% used it sometimes while 23.93% used it always.

Table 4 showed that apart from the use of memorandum, calendar and diaries, most of the principals never used other forms of print media while others either used them rarely or sometimes.

Table 4: Use of Print Technology for Administrative Purposes by Principals.

C	Use of Print Media	Never	Rarely	Sometimes	Always
1	Print Technology	50(40)	28(22.4)	33(26.4)	14(11.2)
2	Research bulletin	52(43.70)	35(29.41)	29(24.37)	3(15.79)
3	Leaflets	63(55.26)	20(17.54)	24(20.06)	7(6.14)
4	Posters	38(29.23)	10(7.69)	60(52.63)	22(16.92)
5	Calendar of Work	9(6.92)	5(3.85)	31(23.85)	85(65.38)
6	Diaries	7(5.6)	4(3.2)	38(30.4)	76(60.8)
7	Annual Report	21(16.67)	9(7.14)	26(20.63)	70(55.56)
8	Journal	20(15.38)	23(13.85)	72(55.58)	20(15.38)
9	Newspaper	8(6.15)	23(17.69)	80(61.54)	19(14.62)
10	Magazine	4(3.10)	23(17.83)	75(57.69)	27(23.93)

Source: Survey Data. Percentages in parenthesis

4.5 Perceptions of secondary school principals on the need for ICT in the performance of core administrative duties.

Table 5 showed the perceptions of secondary school principals on the need for ICT in core administrative duties. Analysis of data on administrative areas to use ICT revealed that principals perceived the most important need for ICT was on financial matters with a mean rating of 3.67; followed by internal communication with a mean rating of 3.55 and record of work with mean rating of 3.51. Results further showed the use of ICT for inventory (mean rating=3.51), personal data (mean rating=2.75) and time tabling (mean rating=2.74) were rated low despite their importance. The implication is that the respondents have limited knowledge of the application of ICT in those administrative functions. The chi-square of statistical difference indicated that that there was no significant difference among the perceptions (X^2 =6.67, $\geq$.05). The implication of this finding is that most of these school administrators have limited access to ICT.

Table 5: Perceptions of Secondary School Principals on the need for ICT in the Performance of core administrative duties

Core Administrative Duty	Mean Rating*
Admission	2.67
Registration	2.96
Students' attendance	2.54
Personal Data	2.75
Boarding Facilities	1.86
Recreation	2.13
Safety Practices	1.98
Health Services	2.56
Transportation	2.44
Catering Services	2.06
G&C Services	2.67
Discipline	2.74
Withdrawal	1.91
Progress report	3.04
Record of work	3.51
Time Table	2.74
Exam results	3.18
Staff personal data	2.19
Teaching load	2.85
Attendance	2.59
Staff development	2.89
Promotion	2.91
Staff welfare	2.25
Loan	2.30
Annual leave	2.36
Maternity leave	2.11
Study leave	2.18
Casual leave	2.09
Sick leave	2.05
Pension & Gratuity	2.91
Discipline	3.38
Insurance	2.54
Financial matters	3.67
Inventory of facilities	2.48
Internal communication	3.55

Source: Survey Data

*Rating: 4= strongly agree, 3= agree, 2= disagree, 1= strongly disagree.

5. Discussion

The educational system is undergoing changes occasioned by socio-economic, political and technological changes in the external environment. This makes the administrative work of the principal very challenging. The principal plays a very important role in the educational system. Consequently, state of the art ICT facilities should be provided for efficient management of the school system. Investment in ICT is indispensable considering the relationship between economic development and effective use of ICT. Howell and Lundall (2000) emphasized that the effective use of ICT in a country impacts strongly on the competitiveness of that economy within the global market place as well as the ability of the governments to deliver on their social goals. The educational system is already facing numerous problems ranging from lack of infrastructural facilities for effective teaching and learning to poor quality teachers. This raises the issue of the extent the use of ICT in administrative and managerial duties of the principal will receive adequate attention. In 1987, the then Minister of Education inaugurated a National Policy on Computer Education Committee to enable the country catch up with the rest of the world and to be ready to enter the 21st century with them (Ajelabi, 1997). More than twenty years after, Nigeria cannot claim to have made meaningful progress in the use of ICT in the educational system especially at the secondary level. Policy formulation is not the problem of Nigeria but rather the implementation at the various levels of the educational system. Inadequate funding, corrupt practices at high levels, sudden and frequent changes in government, and a host of other problems constitute impediments to policy implementation.

6. Recommendations and policy Implications

Increasing the quality of administrative service delivery requires the use of ICT. It is therefore recommended that a needs assessment be carried out to facilitate development and deployment of ICT in secondary schools. Policies play important role in channeling resources, consequently, policy formulation in respect of the use of ICT will add impetus to the adoption of ICT. According to Isaac, Broekman and Mogale (2001) most policy work on ICT in education in Africa is funded by donor agencies such as the World Bank's Link for Development (WorLD), the International Development Research Centre (IDRC), the International Education and Resource Network (IEARN) and the Department for International Development (DFID), Schools Online, and the Swedish International Development Cooperation Agency (SIDA). Training of the principals through workshops, seminars and certificate courses will serve as the first stage in the development of the needed competencies for use of ICT. The principals when trained will train the teachers to the point where they will develop interest in the use of ICT.

The government should look into the issues of funding of education in general and ICT in particular. Inadequate funding of education over the years may well be the hydra-headed impediment to the actualization of education goals and objectives. Access to information is deemed crucial to development during this era of a global economy supported by electronic communications.

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