

E-Governance Education: Issues of Quantity and Quality of Instructional Materials in Secondary Schools in Osun State, Nigeria

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Abstract

This study examined the quantity and the quality of Information and Communication Technology (ICT) materials use to teach e-governance in public and private secondary schools in Osun State. The study sample comprised 120 secondary schools selected using multi-stage and stratified random sampling technique. One research instrument was used for the study namely e-Governance education Instructional Materials Check List (IMCL). The ICT instructional materials as recommended in secondary school government curriculum were used as the standard for data collection. The results of the study showed that recommended ICT instructional materials are not adequately available to teach e-governance concept in public (65.56

Index terms— government, e-governance, information and communication technology (ICT), instructional materials.

1 Introduction

he primary responsibilities of any government include law and policy making, execution of laws, approval of policies and interpretation of laws. Failure or success of any dispensation at the helm of affairs of governance in any country at a particular period is neither shared nor attributed to the people whichever way but only to the government in regime. With this, every government gives it whatever it takes to ensure that its governance is accorded good policies/practices, ends in success and be citizensatisfactory. In the light of this, many governments of different countries have endlessly been looking for and involving machineries that could help their administrations. The dawn of twenty-first century that was accompanied by different changes and developments in many spheres of human endeavours have also been described as the "digital revolution", "information age and network society" (Castells, 2010).

That is, the era that has brought revolutions into obtaining, passing and exchanging of information unlike as it were before. It also brought the fast, all-inclusive and easy spread of information that made the world to be called a global village today. This era has also been accorded the "digital-era governance" (DEG) ?? Many countries especially underdeveloped countries are facing various problems like corruption, lack of transparency, lack of accountability, insecurity, rigging in election, use of youth as thugs and other illegal activities. The control and eradication of all these malevolences rest on the government of each nation. Government is generally viewed from three perspectives, namely: Government as an institution of the state, Government as an art of governing and Government as an academic field of study. According to Alonge (2011), Government as an institution of the state is the machinery (namely: the legislature, the executive and the judiciary) for carrying out the business of the society. Government as an art of governing is the process by which individuals perform the legislative, executive and judicial functions for the common good of the citizens. Government as an academic field of study is the science of organization of government and methods of formulating and executing policies. The interactions of government and the people as well as transaction of vital public information among them become inevitable. Due

to the increase in population, multiple of government activities and emergence of new ideas, some governments have adopted e-governance and made public governance possible through electronic materials.

E-governance simply means electronic governance, that is, government process powered by electronic gadgets to interact with the relevant stakeholders and carry out specific aspects of public governance. Coleman (2006) described e-governance as the combination of electronic information-based services (e-administration) with the reinforcement of participatory elements (e-democracy) to achieve the objective of 'balanced e-government'. Muir and Oppenheim (2002) portrayed e-governance as the delivery of government information and services online through the internet or other digital means. They explained it as the governance that is powered by electrically connected gadgets and ICT materials to circulate necessary public information among the stakeholders in order to carry out specific aspects of governance of the state. E-governance is the use of internet technology as a platform for exchanging information, providing services and transacting with citizens, businesses, and other arms of government (UN e-government survey, 2004, 2005, 2008). Also, Abramson and Means (2001) viewed e-governance as the electronic interaction (transaction and information exchange) between the government, the public (citizens and businesses) and employees. The specific aspects of governance that have adopted e-governed through these electronic means have redefined government, reduced number of government employees, included specialized individuals and reduced public recurrent expenditure through reduced salaried workers. This means of interactions have brought about a great improvement on governance as opined by Fraga (2001).

The possibility of challenges is inevitable as Heeks (2006) argues that e-government is hard to manage, difficult to implement and often fails especially when people are not well informed about it. To this end, the Nigerian government through the Nigeria Educational Research and Development Council (NERDC) has introduced e-governance into secondary schools' Government curriculum since 2007. This was with a view to providing adequate information and ameliorating unacceptable trends of social ills in the lives of secondary school students before they get into the larger society. Information and Communication Technology was recommended as the instructional materials to teach and learn about e-governance. This involves the use of instructional material especially the teaching and learning of how to handle ICT materials to get public information on the internet, exchange information on public and social issues through their contributions and chatting on the internet. Instructional materials are important materials provided in the teaching learning process to clarify point, hold learners attention and help them retain important information. In the situation where instructional materials are not available as recommended by the concerned authorities there may be no significant learning (Obadiora 2019). Except there is proper monitoring, Nigerian might be facing difficulties in the provision of ICT recommended materials for the implementation of the e-governance curriculum. However, the extent at which ICT materials to implement e-governance curriculum are available in quantity and quality in secondary schools in Osun State is not certain, hence this study.

II.

3 Objectives

The objectives of the study are to:

4 Methodology

This study used the survey research design. The population for the study comprised secondary school Government teachers in Osun State. The study sample comprised 120 secondary schools selected using multi-stage sampling technique. Two Local Government Areas (LGAs) were selected from each of the three senatorial districts in the State using simple random sampling technique. Twenty schools (10 public and 10 private) were selected from each of the selected LGAs using purposive and stratified sampling techniques (based on the availability of ICT materials and school type) making a total number of 120 secondary schools. One research instrument was used for this study namely e-Governance Instructional Materials Observation Check List (IMOCL). The instrument was divided into two sections; Section A and Section B. Section A was designed to collect data on the availability of e-governance ICT materials in secondary schools in Osun State while Section B was designed to collect data on the quality of the available egovernance ICT materials in the State. The egovernance ICT instructional materials as recommended in the secondary school government curriculum were used as standard to collect data on the e-governance ICT instructional materials in the study (secondary data). The study was carried out in six weeks. The researchers and the research assistants spent one week in each Local Government Area to administer the research instruments through observation. During these periods the researchers moved round the schools to collect data on the quantity and quality of ICT instructional materials available for the implementation of e-governance curriculum in secondary schools in Osun State by checking the available ICT instructional materials, count the numbers and test their level of functionality. Data collected were analyzed using descriptive statistics of frequency count, simple percentage and average.

V.

5 Results of the Study

Research Question 1a: How available are the ICT materials to teach e-governance in the public secondary schools in Osun State?

To answer this question, the nine items of egovernance ICT instructional materials recommended by NERDC in Government curriculum were used as the standard. Schools with 10 items of each recommended item were considered adequate in quantities while those schools that had below 10 items of each recommended item were considered inadequate in quantities. The results were analyzed in table 1. The data collected from the selected 60 public secondary schools through observation showed that ICT materials are not adequately available in the following items: trackballs 0 (00%), touchpads 1 (1.67%), lightpens 1 (1.67%), microphone 2 (3.33%), network 2 (3.33%) and printers 0 (00%) as presented in table 1. While ICT recommended instructional materials are adequately available in studied public schools in the following items: mouse 60 (100%), computer and monitor 60 (100%) and keyboards 60 (100%). The ICT items that are adequately available resulted in the average of 20.67 (34.44%) while ICT items that are not adequately available resulted in the average of 39.33 (65.56%). This showed that ICT recommended instructional materials are not adequately available to teach e-governance concept in public secondary schools in Osun State.

Research Question 1b: How available are ICT materials to teach e-governance in the private secondary schools in the State?

To answer this question, the nine items of egovernance ICT instructional materials recommended by NERDC in secondary school Government curriculum were used as the standard. Schools with 10 items of each recommended item were considered adequate in quantities while those schools that had below 10 items of each recommended item were considered inadequate in quantities. The results were analyzed in table 2. The data collected from the selected 60 private secondary schools through observation showed that ICT materials are not adequately available in the following items: trackballs 2 (3.33%), touchpads 4 (6.67%), lightpens 3 (5.00%), microphone 3 (5.00%), network 4 (6.67%) and printers 3 (5.00%) as presented in table 2 (see appendix II). While ICT recommended instructional materials are adequately available in the schools in the following items: mouse 60 (100%), computer and monitor 60 (100%) and keyboards 60 (100%). The ICT items that are adequately available resulted in the average of 22.11 (36.85%) while ICT items that are not adequately available resulted in the average of 37.89 (63.37%). This showed that ICT recommended instructional materials are not adequately available to teach e-governance concept in private secondary schools in Osun State.

Research Question 2a: What is the quality of the available ICT materials used in teaching e-governance in public secondary schools in Osun State?

To answer this question the functionalities of the recommended nine items of e-governance ICT instructional materials were observed. These were rated as not functioning, poorly functioning, moderately functioning and perfectly functioning. Moderately functioning and perfectly functioning were described as good levels of functioning (good quality) while not functioning and poorly functioning were described as bad levels of functioning (bad quality). The data collected from the selected 60 public secondary schools were analyzed in table ??.

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Table ?? :

From table ?? the observed data revealed 53.33% bad functioning in the accuracy of the mouse, 50% bad functioning and the display of information and images by the computer and monitors, 100% bad functioning of the accuracy of trackballs to transmit hand movements, 60% bad functioning of the accuracy of keyboards to issue command, 98.33% bad functioning of touch pads to transmit hand movement on the screen, 100% to bad functioning of light pens to display handwriting on the screen, 95% bad functioning of microphones to convert electrical signals into speakers, 96.67% bad functioning of networks to supply information on the screen and 75% bad functioning of the printers to print data on papers. The results showed that 8 items out of 9 items have higher percentages of bad functioning with only ability of monitors to display information has 50% at both bad functioning and good functioning. Then on the average, the results showed that 48.55 (80.93%) have bad quality of ICT Materials to teach e-governance while only 11.44 (19.07%) have good quality of ICT materials to teach e-governance in public secondary schools in Osun.

Research Question 2b: What is the quality of the available ICT materials used in teaching e-governance in private secondary schools in Osun State?

To answer this question the functionalities of the recommended nine items of e-governance ICT instructional materials were observed. These were rated as not functioning, poorly functioning, moderately functioning and perfectly functioning. Moderately functioning and perfectly functioning were described as good levels of functioning (good quality) while not functioning and poorly functioning were described as bad levels of functioning (bad quality). The data collected from the selected 60 private secondary schools were analyzed in table 4. Table 4 revealed that 61.67% of the mouse had good functioning of the accuracy, 63.33% of the computer and monitors had good functioning to process information and display images, 96.67% of trackballs had bad functioning of the

accuracy to transmit hand movements, 70% of keyboards had good functioning of the accuracy to issue command, 93.33% of touch pads had bad functioning to transmit hand movement on the screen, 98.34% of light pens had bad functioning to display handwriting on the screen, 90% of microphones had bad functioning to convert electrical signals into speakers, 93.33% of networks had bad functioning to supply information on the screen and 61.66% of the printers had bad functioning to print data on papers. The results showed that six items out of nine ICT recommended items had higher percentages of bad functioning. On the average, the results showed that 42.55 (70.92%) had bad quality of ICT materials to teach e-governance while only 17.44 (29.07%) had good quality of ICT materials to teach e-governance in private secondary schools in Osun State.

8 VI.

9 Discussion of Findings

From the analyses in tables one to four, the study discovered that ICT recommended instructional materials are not adequately available to teach e-governance concept in both public and private secondary schools in Osun State. These results corroborate the findings of Akubue (2010) in his study "Use of Instructional Materials for Teaching Social Studies in Junior Secondary Schools" that there was inadequate availability of instructional materials for teaching in some of Nigeria secondary schools (Nsukka Local Government Area of Enugu State). Also Isamalia (1986), Adewoye (1987) and Famwang (1989) had earlier discovered that teaching materials are significantly lacking in Nigeria schools. The extent at which instructional materials facilitate teaching and learning activities and the attainment of the lesson objectives depends on the adequacy and appropriateness of materials selected (Jiya, 1993). Odiya and Omofonmwan (2007) agreed that there is unpleasant under funding of the educational sector in Nigeria which has resulted to shortage of teaching and learning materials. And where funds are not available to provide instructional materials the performance level of students will be very low and objective of the course may not be achievable.

Further more, the results of this study showed that the level of quality of ICT instructional materials in teaching e-governance in the selected public and private secondary schools in Osun state is very low. This confirms the finding of Afolabi and Adeleke (2010) who carried out a research on the Assessment of Resources and Instructional Materials Status in the Teaching of Mathematics in Southwestern Nigeria that the few available mathematical instructional materials for the teaching of Mathematics in the selected schools were of low or bad quality. The results are also in line with the finding of Onyia (2013) that the instructional materials designed and used in secondary schools in Enugu were of no quality, out-dated, cost effective and did not encourage intellectual development of the students. At the international level, the results of this study is similar to what Tety (2016) discovered in his study on "The Role of Instructional Materials in Academic Performance in Community Secondary Schools in Rombo District, Tanzania". Findings of the study showed that many schools in the study area do not use instructional materials with appropriate quality. Mwiria (1995) opined that student's performance is affected by the quality and quantity of the available teaching and learning resources. Quality instructional materials create excellence learning experience and determine quality of education that learners obtain.

10 VII. Conclusion and Recommendation

In respect of the findings of this study, it was concluded that the teaching of e-governance concept has a serious challenge in actualizing the objectives for which it was introduced because the ICT instruction materials used for its implementation in both public and private secondary schools in Osun State are grossly inadequate in quantity and quality. The study therefore recommends that concerted effort of all the stakeholders in the education sector is needed for the provision of instructional materials for the implementation of e-governance curriculum in the state.

III.

Research
Questions

1a) How available are ICT materials to teach e-governance in the public secondary schools in State?

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1b) IV.

Figure 1:

1

S/N	ICT Items	Schools Where Adequately Available Freq (%)	Schools Where Not Adequately Available Freq (%)
1	Mouse	60 (100%)	0(0.0%)
2	Computer&Monitor	60 (100%)	0(0.0%)
3	Trackballs	0(00%)	60 (100%)
4	Keyboards	60 (100%)	0(0.0%)
5	Touchpads	1(1.67%)	59 (98.33%)
6	Lightpens	1 (1.67%)	59 (98.33%)
7	Microphone	2 (3.33%)	58 (96.67%)
8	Network	2 (3.33%)	58 (96.67%)
9	Printers	0 (00%)	60 (100%)
	Average	20.67(34.44%)	39.33 (65.56%)

Figure 2: Table 1 :

2

S/N	ICT Items	Schools Where Adequately Available Freq(%)	Schools Where Not Adequately Available Freq (%)
1	Mouse	60 (100%)	0(0.0%)
2	Computer&Monitor	60 (100%)	0(0.0%)
3	Trackballs	2 (3.33%)	58 (98.67%)
4	Keyboards	60 (100%)	0(0.0%)
5	Touchpads	4 (6.67%)	56 (93.33%)
6	Lightpens	3 (5.00%)	57 (95.00%)
7	Microphone	3 (5.00%)	57 (95.00%)
8	Network	4 (6.67%)	56 (93.33%)
9	Printers	3(5.00%)	57 (95.00%)
	Average	22.11 (36.85%)	37.89 (63.37%)

Figure 3: Table 2 :

S/N	Items	No of Sch where Not functioning Freq (%)	No of Sch where Poorly function- ing Freq(%)	No of Sch where Moderately function- ing Freq (%)	No of Sch where Perfectly functioning Freq (%)
1	Accuracy of the mouse to display hand movement on the screen	12 (20.00%)	20 (33.33)	22 (36.67%)	6 (10.00%)
2	The function display of information and images on the computer and monitor	12 (20.00%)	18 (30.00%)	25 (41.67%)	5 (8.33%)
3	Accuracy of trackballs to transmit movement on the screen	59 (98.33%)	1 (1.67%)	0 (00%)	0 (00%)
4	Accuracy of keyboards to issue commands on the screen	8 (13.33%)	28 (46.67%)	18 (30.00%)	6 (10.00%)
5	Ability of touchpads to transmit movements on the screen	57 (95.00%)	2 (3.33%)	1 (1.67%)	0 (0.0)
6	Fastness of lightpens to display handwriting on the screen	60 (100%)	0 (00%)	0 (00%)	0 (00%)
7	Ability of microphones to convert electrical signals to speakers	55 (91.67%)	2 (3.33%)	3 (5.00%)	0 (00%)
8	Accuracy of the network to supply information on the screen	57 (95.00%)	1 (1.67%)	2 (3.33%)	0 (0.0%)
9	Ability of printers to print data onto papers	25 (41.67%)	20 (33.33%)	10 (16.67%)	5 (8.33%)
	Average	38.33 (63.89%)	10.22 (17.04%)	9 (15.00%)	2.44 (4.07%)

Figure 4:

S/N	Items	No of Sch where Not function- ing Freq (%)	No of Sch where Poorly func- tioning Freq(%)	No of Sch where Mod- erately function- ing Freq (%)	No of Sch where Perfectly function- ing Freq (%)
1	Accuracy of mouse to display hand movement on the screen	7 (11.67%)	16 (26.67%)	27 (45.00%)	10 (16.67%)
2	The function display of information and images on the computer and monitor	7 (11.67%)	26 (43.33%)	26 (43.33%)	12 (20.00%)
3	Accuracy of trackballs to transmit movement on the screen	57 (95.00%)	1 (1.67%)	1 (1.67%)	1 (1.67%)
4	Accuracy of keyboards to issue commands on the screen	3 (5.00%)	15 (25.00%)	28 (46.67%)	14 (23.33%)
5	Ability of touchpads to transmit movements on the screen	56 (93.33%)	0(0.0%)	2(3.33%)	2 (3.33%)
6	Fastness of lightpens to display handwriting on the screen	58 (96.67%)	1(1.67%)	1(1.67%)	0 (0.0%)
7	Ability of microphones to convert electrical signals to speakers	50 (83.33%)	4 (6.67%)	6 (10.00%)	0(0.0%)
8	Accuracy of network to supply information on the screen	56 (93.33%)	0 (0.0%)	4 (6.67%)	0(0.0%)
9	Ability of printers to print data onto papers	23 (38.33%)	14 (23.33%)	17 (28.33%)	6 (10.00%)
	Average	35.22 (58.70%)	7.33 (12.22%)	12.44 (20.74%)	5 (8.33%)

Figure 5:⁷Table 4 :

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