The Use of Information and Communication Technology in Technical and Vocational Education: The Case of Universal Basic Education (UBE) Schools

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Abstract   The problem of this study is the implementation of ICT skills acquisition and its use in technical education for the realization of vision 2020. The purpose of this study therefore is to determine how the implementation of ICTS programmes has been in Primary and Basic Secondary schools? And to relate the interest of students/teachers in ICTs programmes in Primary/Secondary schools. The design of this study is descriptive survey. A simple random sample was used to select 180 Primary school pupils from 11260 population, 200 Junior Secondary students out of 5077and 150 teachers out of 768 from both the primary and secondary section of the UBE. The instrument for data collection was a valid questionnaire containing 25 items and was established at 0.76 reliability. The findings indicated that ICT education at the basic level of our education system is very low. There is also a general quest for computer education knowledge among pupils/students and teachers, and that, those who had little knowledge acquired such through private effort. Schools in the local government area are yet to be equips with computer facilities. There is significant difference between the attitudes, interest and quest for ICT education among pupils/students and teachers. Teachers also saw the need for compulsory computer education at both levels and considered it very important, said it is not yet important to use ICT knowledge for teacher's employment, but consider it above average important for teachers in-training. It was recommended that attention be shifted to the basic level of education, through strengthening ICT programmes by monitoring implementation at the local government level especially the UBE schools.

***Keywords:** Acquisition, Information and Communication Technology (ICT), Technical and Vocation Technology (TVE)*

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1. Introduction

Information and Communication Technology (ICT) has become the most popular and easy means of dissemination of information and communication. For a nation to be able to build its capacity through Technical and Vocation Education (TVE) for the realization of Nigeria's vision 2020, the basic level of education be care/catered for in the mainstream plans, and the implementation be followed up tenaciously. In other words, the ICT in TVE must be strengthening at the base level (UBE) for effective realization of the vision. But unfortunately, all is not well with ICT equipment/instruments at the UBE level.

The concept of Information Technology (IT) refers to harnessing electronic technology for information processing needs of business organizations using the computer and telecommunications-based equipment for storage, processing and dissemination of information [5]. While ICT is an umbrella term that includes any communication devices or application, encompassing radio, television cellular phones, computer and network, hardware and software, satellites systems and so on, as well as the various services and application associated with them, such as video conferencing and distance learning. It is therefore, all embracing, that is, one need to be electronically educated and one major device for undertaking Ict is computer usage. No wonder the European commission says, the importance of ICTs lies in Technology itself than in its ability to create greater access to information and communication in under serviced population [6].

Technology and Vocational Education (TVE) is used as a comprehensive term referring to those aspects of the educational process involving, in addition to general education, the study of technology and related sciences and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupation, various sectors of economic and social life [2]. The goals of TVE among others are to provide trained manpower in his applied sciences, technology and business particularly at craft, advanced craft and technical levels. The attainment of this

goal will help us as a national for capacity building by laying a good foundation at the base (UBE) schools.

We could deduce that computer and electronic education for ICT development, which in turn develops a good capacity building, is a necessary ingredient at the UBE, this facet of education need not be neglected. To enhance the achievement of the content of the content of the vision 2020, ICTs in primary and junior school must be put into consideration. The name vision "vision 2020" has become a household name in Nigeria, even before the present government. The dreams and the aspiration of Nigeria according to Ezekwesili [1] are to emerge as one of the top twenty newly industrialized countries (NICs) by the year 2020. This is the genesis of the slogan "vision 2020"

In view of vision 2020, the 7-point agenda of then President Yar' Adua/Jonathan government is to hasten the achievements of the vision which are; provision of power, food, security, and agriculture, wealth creation and employment, transport sector, land re-form, education as outline by Okposo [4]. To achieve the seven –point agenda, ICT in UBE must not be neglected, because that is the basis for which a long time development and exploitation will be possible.

As the world is changing on geometrical rate in sciences and technology, especially in ICT, the nation must move along with the change. Though the government made a giant stride in attempt to catch up with these noble scientific innovations, from the time of President Obasanjo, when the first mobile communication (MTN) was introduced in Nigeria, for easy communication and dissemination of information. The use of computers for information and learning came up, which gave birth to the current issue of e-education. It is at this point, I draw my inspiration to evaluating the implementation of computer, and other ICTs system at the based level of education.

As stipulated on National Policy on Education [2], the goals of Primary Education include the inculcation of permanent literacy and numeracy, and the ability to communicate effectively, and to provide the child with the basic tools for further educational advancement. While at the junior secondary level, the broad goals of education shall be to the individual for: (a) Useful living within the society; and (b) higher education. Based on the above, the subjects to be offered among others include language (communication), sciences and computer education. The government further promised on section (5) (30f) that "Government shall provide necessary infrastructure and training for the integration in the school system in recognition of the ICT role in advancing knowledge and skills in the modern world".

Going by what is entrenched on the policy, the government truly knows that UBE level is where we lay the foundation for capacity building in ICT and the tertiary level is just to do the roofing. As explain below with the diagram.
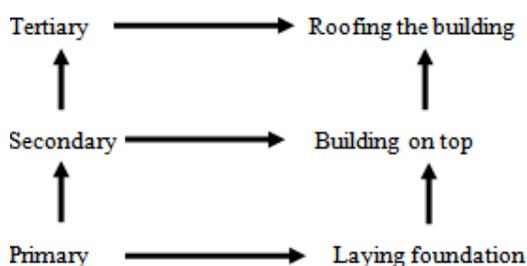
So strengthening ICT at the base level will go a long way to help in capacity building. On teacher's knowledge, interest and awareness of ICT, Obi [3] conducted a study on information technology skills needed by Business Education Teachers for effective instruction in the secondary schools in Enugu State, her result reveal great needs by Business Education Teachers for information technology skills. Oyebisi et al [5] conducted a study to determine the extent of application of information technology in Lagos, Ibadan and Oshogbo, and discovered that information technology has invaded the business office. As it is reflected on the above diagram, the basic level of education (UBE) is the foundation and their teachers are the wheel to set in motion the foundation and their materials is to be provided by the federal government. It is on this background that the researcher decides to take a study on the extent of implementation of this noble goal in primary and junior secondary school, and to assess the level of ICT knowledge among pupils/students and teachers, their interest and attitude toward ICT. Since ICT interest and services is more emphasized at the tertiary level of education in Nigeria, with private services provider, such as MTN, GLO and Afrihub.

1.1. Objectives of the Study

This study sought to determine the extent to which the implementation of ICTs programme in primary and junior secondary has reach, and to relate the interest of pupils/students and teachers by comparing the primary school with their counterpart in junior secondary school.

1.2. Specific Objectives

The specific objectives of the study were;
1. To determine the extent to which pupils/students and teachers in the basic schools are skilful in the use of ICT.
2. To determine the availability of ICT facilities
3. To determine whether there is difference in the attitudes and interest, in the use of ICT skills among pupil/students and teachers in primary and junior secondary.

1.3. The Research Questions

The research questions were as follow;
1. To what extent are the pupils/students and teachers in the basic schools skilful in the use of ICT.
2. Is there availability of ICTs facilities in our schools?
3. Is there significance differences between the attitudes/interests of pupils/student and teachers in primary and junior secondary schools?

2. Methodology

The research is a descriptive survey carried out among pupils/students from primary 4 to 6 and junior secondary 1 to 3, as well as teachers from both primary and junior secondary school in Ahoada East Local Government Area of Rivers State, Nigeria.

2.1. Sample and Sampling Technique

A simple random sample of 180 primary pupils out of the population of 11,260, 200 junior secondary students from the population of 5077 and a total of 150 teachers out of 568 was used.

2.2. Method of Data Collection

A two parts questionnaire was used to collect information from the pupils/students, part A sought information on sex and class of the pupils/students, while part B sought information on ICT. The teachers have a different questionnaire with section A seeking information on teachers gender, qualification and class taught and section B and C seeking information on ICT. The data was collected through the administration of the instrument to the randomly selected pupils/students and teachers.

2.3. Reliability and Validity of the Instrument

The instrument was pilot – tested and it yielded coefficient of 0.76 using Cronbach Alpha method. The instrument was presented to senior experts, and it was considered adequate and valid for use.

2.4. Data Analysis

The data was analysed using simple percentage, mean score, standard deviation and Z-test of proportion. The scale in section C of teachers questionnaire is rated as follow; very important--------4, averagely important--------3, important----------2, not important-------1. The average of 2.5 was used as the cut-off point for analysis, while other sections has no or yes responses, on both pupils/students and teachers questionnaires.

3. Result of the Study

Research question one: To what extent are the pupils/students and teachers in the basic schools skilful in the use of ICT.

Table 1. PUPILS/STUDENTS RESPONSES

S/N	ITEMS	YES	NO
1	Can use phone to communicate and send text messages	160 (80%)	40 (20%)
2	Browse on the internet	20 (10%)	180(90%)
3	Can store and retrieve document from computers	60 (30%)	140 (70%)
4	Can process words using Microsoft words	80 (40%)	120 (60%)
5	Can use anti-virus, delete messages from hard disk	10 (5%)	190 (95%)
6	I can play computer games	40 (20%)	160 (80%)
7	I can watch video film using computers	50 (25%)	150 (75%)
8	I can use my handset to watch news, read my Bibles, Quaran and check meaning of words.	20 (10%)	180 (90%)
9	I can use data base software to access e-mails, e- learning and e-business.	25 (12.5%)	175 (87.5%)
10	All the computer skills that I acquired were through my school.	15 (7.5%)	185 (92.5)
	TOTAL AVERAGE PERCENTAGE	225 (22.5%)	735 (73.5%)

Apart from the ability to communicate and send text message by the respondent with high percentage of 80%, all other items had below 50%. On the overall, the percentage of those who answered 'NO' was higher than those answered 'YES' to the positive items of skill acquisitions.

Table 2. TEACHERS RESPONSES

S/N	ITEMS	YES	NO
1	Can use phone to send text messages	135 (90%)	15 (10%)
2	Browse on the internet	30 (20%)	120 (80%)
3	Can store and retrieve document from computers	22 (15%)	128 (85%)
4	Can process words using Microsoft words	65 (43%)	85 (57%)
5	All the computer skills that I acquired was through my school	6 (4%)	144 (96%)
6	I can play computer games	60 (40%)	140 (60%)
7	I can watch video film using computers	45 (30%)	105 (70%)
8	I can use my handset to watch news, read my Bibles, Quaran and check meaning of words from dictionary	15 (10%)	135 (90%)
9	I can use data base software to access e-mails, e- learning and e-business.	35 (24%)	165 (76%)
10	I can operate printers, photocopiers, scanners and telex machine	(8%)	188 (92%)
	TOTAL AVERAGE PERCENTAGE	284 (28.4)	716 (71.6%)

Research question two: Is there availability of ICTs facilities in our schools?

Table 3. result for the availability of computer facilities in the basic schools for pupils/students

S/N	ITEMS	YES	NO
1	Had computer laboratory	10 (5%)	190 (95%)
2	Had computers in my school	15 (7.5%)	185(92.5%)
3	My school had photocopier, printers, and scanning machines, and projectors.	12 (52.5%)	88(4.5%)
4	My school is connected to the internet	0 (0%)	200 (100%)
5	In my school, we have computer teachers	20(10%)	180 (90%)
	TOTAL AVERAGE PERCENTAGE	57 (6.3%)	843 (93.7%)

Table 4. result for availability of computer in the basic schools for teachers

S/N	ITEMS	YES	NO
1	Had computer laboratory	5 (3.3%)	145 (96.7%)
2	Had computers in my school	10 (6.7%)	140 (93.3%)
3	My school had photocopier, printers, and scanning machines, and projectors.	6 (4%)	144 (96%)
4	My school is connected to the internet	9(6%)	141 (94%)
5	In my school, we have computer teachers	12(8%)	138 (92%)
	TOTAL AVERAGE PERCENTAGE	42 (5.6%)	708(94.4%)

Table 5. The result of the items for analysing the attitudes, interest and the quest for computer knowledge by teachers

S/N	ITEMS	MEAN	SD	REMARK
1	There is the need for computer education for both teachers and pupils/students of UBE	4.5	0.52	Very important
2	Teachers needs e-learning skills to be able to teach students in the modern methods	3.75	0.92	Important
3	I can't do without television, mobile phones and radio	4.86	0.64	Very important
4	Computer knowledge be made compulsory for all teachers in –training	4.15	0.5	Above average important
5	ICT knowledge and its application in class environment should be used as a criteria for employment of new teachers	1.89	0.2	Not important

Items 1, 3, and 4 are considers as very important and above average important respective in classroom instructions, with respect to attitudes, interest and the quest for computer knowledge.

Table 6. Z – test Analysis of pupils/students' attitude, interest and the quest for computer knowledge

School	Pupils/students	Responses	Total	Proportion of yes	Z- ratio
	Yes	No			
Primary	63	27	100	0.63	5.50
Secondary	81	19	100	0.81	
Total	144	46	200	1.44	

Critical Z- Value at 0.05 is 1.96. There is no significant difference between the attitudes of pupils in primary and students in secondary; the observed difference is by chance.

4. Discussion of Results

From table one, the pupils/students data analysis show that 90% of them cannot browse on the net, 70% cannot retrieve document, 60% cannot process words and 87.5% cannot use e-mail, e-learning and ebusiness. 95% also indicated that there is no computer/electronic type writer in their schools. The little they know about ICT is from their homes, commercial computer centres and peers at their private time. Only 5% know about anti-virus and 8% cannot use printers, photocopier and scanning machines. On the overall, an average of 22.5% was on the positive responses on the use of computer skills.

From table two for teachers; apart from the use of phones to send text message that had 90% on positive response, all other skills were on the low percentages for yes. 85% cannot retrieve retrieved nor store information on the computers, 90% cannot use their handset to receive news, read Bible/Quaran nor use dictionary and 76% cannot use computer for e- learning/teaching. Majority of the teachers cannot access internet services, teachers also accepted needing e-learning/teaching skills and from oral conversation with the respondents, vast majority are not aware of e-education (electronic education). Both pupils/students and teachers responded that all they acquired about the ICTs skills was through personal efforts, teachers added that although the State government organized a computer training, but it was not details and it was fragment and disjointed. The most frequent means of receiving information and communication by teachers are the uses of phones, television and radios. 92% of the teachers cannot computers, photocopiers, and scanner and telex machines. On the overall 28.4% were on the positive response, while 71.6% were on the negative responses on the use of computer skills. On the whole the teachers have low rate of ICTs skills, and if so how can they impact such knowledge to their pupils/students, when they lack such.

From tables three and four on the availability of ICTs facilities in their schools, 95% and 92.5 percentage of the pupil/students attested that they have computer laboratory, neither computers, 96.7% and 93.3% of the teachers responded on the same items respectively. Computers are yet to be made available in our UBE schools. The only GTC (UBE) school in the local government had only two computer acquired through effort of the Principal. On the whole both pupils/students and teachers responded negatively with overall average percentages of 6.3% and 5.5% on the yes and 93.7% and 94.5 on the no responses. This is contradictory to what is entrenched on National Policy on Education [2], in other words there is very little or no implementation of the policy statement especially in local areas, considering the high quest for computer education in the area.

Analysing the result from table five; the need for computer education for both teachers and pupils/students of UBE was considered very important, teachers needs to acquired e-learning/teaching skills was considered as important, while making Computer knowledge compulsory for all teachers in –training was accepted as above average important. Although making ICTs knowledge as a pre-requisite for teachers employment was considered not important. It is probably so because there were compulsory computer training for teachers in-training yet which supposed not to be so.

The result on table six indicated that there is no significant difference between the attitudes, interest and the quest for ICTs skills and knowledge between of pupils in primary and students in secondary; the observed difference is by chance. Likewise there is no significant difference between the attitudes, interest and the quest for

computer knowledge between teachers in primary and their counter parts in junior secondary schools. There is general positive response for ICT education at the based level (UBE) of education, as observed in this research in Ahoada East Local Government of Rivers State.

5. Conclusion and Recommendation

This study sought to find out the level of implementation of ICT education at the based level of our education, and to assess the application of computer skills level of both pupils/students and teachers in UBE and their attitudes/interest towards ICT, USING Ahoada East Local Government Area of Rivers State. We could conclude by our findings that we are yet to start the implementation of ICT education as recommended and promised by federal the government to make available the necessary facilities. The knowledge of both learners and teachers of the UBE scheme is at low level and the little they know was acquired through private efforts. In recent time, ICT knowledge and skills has provided for primary and secondary school leavers, as GSM operators, agents to service providers as workers or as sellers. They are also found in computer houses.

It was therefore recommended that ICT education must be strengthening at the base (UBE) level of our education system. Furthermore, for adequate security to exist in our capacity building, we must realize that the larger Nigerian population is within the age of primary and secondary schools, and this cannot be achieved without ICT education as the only State junior Technical College in the local government had only two computers acquired by the principals' personal effort.

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