



**UTILIZATION OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT)
IN TEACHING AND LEARNING OF BUSINESS SUBJECTS IN JUNIOR
SECONDARY SCHOOLS IN DELTA, STATE**

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Abstract

The study investigated the utilization of Information and Communication (ICT) in teaching and learning of business subjects in junior secondary schools in Delta State, Selected public school from Oshimili, Uvwie, and Warri Local Government were used as a case study. The population and sample for the study were business subjects teachers and students from junior secondary schools, numbering Three research questions and two hypotheses guided the study. Structured questionnaire was used to collect the data for the study. Mean and stranded deviation were utilize to answer the research questions, and t-test statistics was employed the test the hypotheses at 0.05 level of significance. Some of the findings of the study include the unavailability and non-utilization of information and communication technologies required for teaching and learning in business subjects in junior secondary schools in Delta State. Other findings were the level of infrastructural decay and the existence of several barriers capable of militating against the teaching and learning of ICT in business subjects. The study therefore recommended that governments at all levels; stakeholders and beneficiaries of business education programme should be made to fund the provision of adequate and functional ICT facilities. It was also recommended that adequate infrastructure should be provided. The identified barriers militating against the teaching and learning of ICT in business studies in senior secondary schools in Delta State should to removed.

Keywords: *Utilization, Information Communication and Technology*

Introduction

Information and Communication Technologies (ICT) are electronic gadgets that receive process, store, retrieve and disseminate information to facilitate and support teaching-learning incorporating a variety of learning strategies (Nwosu, 2017). The use of ICTs in the education process encompasses a continuum of integrated technologies, consisting of applications like power point at one end and virtual learning environments and managed learning environments with significant impact upon teaching strategies at the other end (Onojetah, 2014). Functionally, information and communication technologies (ICT) application includes television and radio that show processes and activities, compact discs (CDs) and digital versatile discs (DVDs) based on laser technologies for writing, reading data, hybrid approaches that provide users with access to media-rich-up-to- data information and video conferencing a method of performing interactive video communications over a regular high- speed internet connection involving two or more participants in different locations.



Undoubtedly, the emergence of new technologies such as computer, word processor, the internet, automated teller machines, reprographic machines, micrographic machines, accounting machines, modern telephonic system including handsets and multimedia among others, have not only revolutionized office environment but have also brought changes in the way people do things (Nwosu, 2017). The computer is one of the most visible of the new technologies. Much as new technologies are indispensable in business subject delivery, the idea of quality service delivery is of utmost importance. Change is the only constant factor in human existence, as a result, in recent years teaching and learning methods have started to change in educational institutions in general and business in particular (Okwuanaso in Okoli and Wagbara, 2016)

Teaching itself is a two ways communication and learning is very important because there must be teaching for learning to take place. This implies that any teaching which does not result in a change in the behaviour of learners is not teaching at all. All teaching plans should therefore be a symbiosis of theoretical vigor with "hands on" practical application. This makes the utilization of ICT by both teachers and students in teaching and learning of business subjects easier. The Federal Republic of Nigeria (FRN, 2014) viewed Secondary School Education as the type of education given after primary education. The goals of education are further highlighted by FRN to include contribution to national development through high level relevant manpower training; developing and inculcating proper values for the survival of the individual and society; acquisition of both physical and intellectual skills which will enable individuals to be self-reliant and useful members of the society among others. They further said that, it may not be because it is relatively new in this part of the world, but because ICT encompass a range of technologies and application systems of microprocessors that have had profound impact on the society and its way of life.

Information and communication technology, is giving rise to new concepts, new ideas and making impact not only in the industries/ businesses but also in the education sector. ICT has simplified education through the utilization of electronics media, internet among others. According Ezeabi and Obeyi in Ibelegbu, (2013), the production and introduction of calculators and computer in the education system worldwide has helped in simplifying teaching and learning in schools, thereby promoting national stability and economic survival. The entire world has become a global village through information and communication technology. The new wave of business subjects and ICT is a dynamic change cutting across every country; a change that is being experienced even more in developing countries. ICT, globalization and educational technology cannot be ignored by any nation, hence, there is need for continued application of ICT in all spheres of educational activities in order to achieve the much desired growth which will enable enhanced technological, social and economic advancement in the developing world (Iben, 2010).

In the words of Onojetah (2014), technological advancement refers to all the processes that integrate computer and communication devices with the traditional manual process. According to the author, virtually, every office function can be automated, thus enhancing the office workers' jobs. With the advent of technological revolution that gave birth to new technologies (ICT) in education, there has been a departure from the conventional approach in curriculum implementation because its main purpose is to transform the old method and approaches to curriculum implementation and not to silence, extinguish or erase curriculum contents (Nwana, 2012).

The philosophy advanced by Apple Classrooms of Tomorrow Today (ACOT²) (2008) based on a collaborative effort with the education community which identified the essential design principles for the 21st century higher education that focus on the relationship that matter most those among students, teachers and curriculum in which skills and outcomes are the hallmark, are very important. According to ACOT² (2008), 21st century learning is at the influence of three major



influences - globalization which increases global interdependence and competition, technology innovations that enables more engaged teaching and learning and provide 24/7 access to content, people and new research on how people learn.

Owing to the fact that business subjects at the secondary school level provide the students with employment opportunities after school, or opportunity for higher education, it is essential to make students to develop adequate skills and abilities to apply these new technologies wherever they will find themselves after this level of education. The new information and communication technologies in teaching/ learning of business subjects according to Ezenwafor (2012) include;

Using broadcast materials or CD ROM for information collection and storage.

Using micro-computers with soft-ware applications to write or produce documents.

Skillful keyboarding

E-mailing and messaging

Internet browsing using search engines, windows messenger, yahoo chat room and others.

Using opaque projector, slide projector and multi-media projector.

Utilizing e-banking, e-marketing and others.

Utilizing different computer software application as word processors, spreadsheets, power point, desktop publisher, graphics and others.

Other technological devices available for teaching business subjects according to Osuala in Ido and Effiong (2014) include media typewriter or automated typewriter, close circuit T.V, word processor, video tape recorder sound on paper system, e-commerce, advanced calculators, dial access system, digital library modem, individual audio application and audio-visual retrieval system. Although these technologies are not new in many advanced countries, they are relatively new in Nigeria (Nwosu, 2017). While some of them are already being utilized in some schools, they are yet to be used in many public secondary schools. Ezenwafor (2012) stated that the earlier the students are taught to move away from the traditional method of using manual typewriter, cutting stencils, adding with manual calculator, to embrace modern technological devices, the better for them. This is because on graduation they are expected to demonstrate marketable skills that will enables them fit into and remain relevant in competitive labour market.

New technologies (ICT) in business education in general and business teachers in particular has posed many challenges to business teachers not only in Nigeria but the world all over (Achugbue, 2011). Many secondary schools do not give adequate priority and attention to the acquisition and utilization of new instructional technologies in business subjects despite their enormous benefits to the teaching/learning process. A survey of the study carried out by other researchers revealed that most secondary schools visited lacked computer laboratories, computer systems, internet facilities, modern teaching aids, scanning machine, media typewriter, electricity, projector, nor any cyber-café around the school compound. The lack of these facilities makes it difficult to teach and prepare students for the use of ICT now and in the future world of work. In a study carried out by Nwosu (2012) on strategies for motivating secretarial education students' interest in emerging technologies, it was discovered that new office technological equipment are lacking and that more theoretical concepts are thought than practical work in emerging office technology

Statement of the Problem

The integration of new technologies into the curriculum content, the new business subjects curriculum contains some components of Information and Communication Technology (ICT) such as computer appreciation, word processing, the use of internet and data processing, which were absent in the old curriculum of business subjects. The researcher observed that most business subjects teachers



in Senior Secondary Schools in Delta State have difficulties in teaching Information and Communication Technology (ICT) component of the curriculum.

The present business subjects teachers were trained theoretically and had been working in the school system for many years, particularly before the introduction of modern technologies in teaching and learning. These teachers were not thought with ICT facilities. This suggests that the training received by teachers and students seem to be irrelevant to the present curriculum because of technological changes taking place in the teaching and learning of ICT and in the work place where students will find themselves after graduation (Nagel, 2013). The acknowledgement that business subjects students in the secondary schools in Delta State lag behind in their skills and competencies in the utilization of ICT brings the problem to the fore-front hence, the need for this study.

Purpose of the Study

The purpose of the study was to determine the extent of utilization of Information and Communication Technology (ICT) in the teaching and learning of business subjects in senior Secondary Schools in Delta State. Specifically, the study sought to find out:

The extent of availability of information and communication technologies in the teaching and learning of business subjects in Senior Secondary Schools in Delta State.

The extent of utilization of Information Communication Technologies in teaching and learning of business subjects in Senior Secondary Schools in Delta State.

The barriers militating against the utilization of Information and Communication Technology in the teaching and learning of business subject in Senior Secondary Schools in Delta State.

Research Questions

The following research questions guided the study:

To what extent is information and communication technologies available for the teaching and learning of business subjects in Senior Secondary Schools in Delta State?

To what extent is ICT utilized in the teaching and learning of business subjects in Senior Secondary Schools in Delta State?

What are the barriers militating against the utilization of ICT in the teaching and learning of business subjects in Senior Secondary School in Delta State?

Hypotheses

The following hypotheses were tested at 0.05 level of significance

H0₁: *There is no significant difference in the mean responses of business teachers and students on the availability of ICT for the teaching and learning of business subjects in Senior Secondary Schools in Delta State.*

H0₂: *There is no significant difference in the mean responses of business teachers and students of business subjects on the utilization of ICE in the teaching and learning of business subjects in Senior Secondary Schools in Delta State.*

Method

The researcher adopted a survey design. The research was carried out in Government/public Senior Secondary Schools in Delta State where business subjects are thought. The population of the study consisted of 1,204 business subject teachers and students in 243 public schools drawn from the 27 Local Government Areas in Delta State. Business subject teachers and student were used for the study because they were able to provide the needed information concerning the utilization of

information and communication technologies in senior secondary schools in Delta State. The sample size used in this study comprised 152 business subject students and 52 business subject teachers. The sample was randomly selected. The instrument for data collection was a structured questionnaire. The questionnaire was structured on a 4 point scale.

Three experts validated the instrument, two in Education Management and one expert in business education. To establish the reliability of the instrument, it was pilot tested with 20 business subject teachers and 30 business subject students in Onitsha Urban, Anambra State. The responses of these teachers and students were subjected to test using Cronbach Alpha. The computation showed that 0.08 was obtained using correlation coefficient.

Mean and standard deviation were used to answer the research questions, and t-test statistics was employed to test the hypotheses at 0.05 level of significance. Any item with mean score of 2.50 and above was regarded as available and any item with mean score of less than 2.50 was considered as somewhat available for the first research question, for the second research question, any item with mean score of 2.50 and above was considered as utilized and anyone with mean scores less than 2.50 was regarded as somewhat utilized. For the third research question, any item with mean score of 2.50 and above was regarded as agreed and any item with mean score that is less than 2.50 was considered as somewhat significant. The hypothesis was accepted if the calculated table value was less than the calculated table value, and rejected if the calculated table value was more than the critical table value.

Results

Research Question 1

To what extent is information and communication technologies available for the teaching and learning of business subjects in Senior Secondary Schools in Delta State?

Table 1: Mean and standard Deviation of Response on the Extent of Availability of Information and Communication Technologies affect the teaching and learning of Business Studies in Senior Secondary Schools
N=204

| S/N | Item Description | X | SD | Decision |
|-----|------------------------------|------|------|--------------------|
| 1 | Computer | 1.87 | 0.68 | Somewhat Available |
| 2 | Internet | 2.53 | 0.74 | Not Available |
| 3 | Internet Modem | 1.31 | 0.56 | Not Available |
| 4 | IPad | 1.18 | 0.50 | Somewhat Available |
| 5 | Digital Versatile Discs (D | 2.62 | 0.80 | Not Available |
| 6 | Podcast | 1.74 | 0.63 | Not Available |
| 7 | Mobile Technologies | 2.07 | 0.56 | Available |
| 8 | Compact Discs (CDs) | 2.86 | 0.67 | Not Available |
| 9 | Video Conferencing Devices | 1.09 | 0.28 | Not Available |
| 10 | Cell Phones | 3.81 | 0.54 | Not Available |
| 11 | Blogs | 2.79 | 0.47 | Not Available |
| 12 | Smart Phones | 1.99 | 0.34 | Not Available |
| 13 | Teleconferencing Devices | 1.13 | 0.38 | Not Available |
| 14 | E-Library | 1.07 | 0.25 | Not Available |
| 15 | Smart/Interactive | 1.02 | 0.14 | Not Available |
| 16 | Television | 2.94 | 0.24 | Available |
| 17 | Power Supply | 2.14 | 0.35 | Somewhat Available |
| 18 | Scanners | 1.97 | 0.30 | Not Available |
| 19 | LCD Projectors | 1.07 | 0.28 | Somewhat Available |
| 20 | Dedicated e-Learning Centres | 2.97 | 0.18 | Not Available |

Table 1 above revealed that 14 items out of the 20 were regarded by the respondents as not available, while 4 item are somewhat available and only two items were available. This conclude that information and communication technologies equipments are not available in the teaching and learning of business studies in secondary schools.

Research Question 2

To what extent is ICT utilized in the teaching and learning of business subjects in Senior Secondary Schools in Delta State?

Table 2: Mean and Standard Deviation of Responses on the Extent to which ICT is Utilized in Teaching and Learning of Business Subject in Senior Secondary Schools in Delta State.

N=204

| S/N | Item Description | X | SD | Decision |
|-----|-----------------------------------|------|------|-------------------|
| 21 | Interactive Board | 1.75 | 0.62 | Somewhat Utilized |
| 22 | Printer | 2.53 | 0.70 | Not Utilized |
| 23 | Desktop Computers | 1.35 | 0.54 | Somewhat Utilized |
| 24 | Scanners | 1.14 | 0.40 | Not Utilized |
| 25 | Laptop Computers | 2.65 | 0.75 | Not Utilized |
| 26 | Digital Versatile Disk Recorder | 1.70 | 0.54 | Not Utilized |
| 27 | Internet Services | 2.24 | 0.47 | Not Utilized |
| 28 | Digital Unit | 2.87 | 0.57 | Not Utilized |
| 29 | Overhead Projector | 1.16 | 0.47 | Not Utilized |
| 30 | Closed Circuit television Cameras | 2.98 | 0.47 | Not Utilized |
| 31 | Film and projector | 1.17 | 0.37 | Not Utilized |
| 32 | Satellite | 1.03 | 0.25 | Somewhat Utilized |
| 33 | Teleconferencing Devices | 1.15 | 0.45 | Not Utilized |
| 34 | E-Library | 2.21 | 0.47 | Somewhat Utilized |
| 35 | Smart/Interactive | 1.01 | 0.10 | Not Utilized |
| 36 | Photocopiers | 1.04 | 0.20 | Somewhat Utilized |
| 37 | Uninterrupted power supply | 1.83 | 0.49 | Somewhat Utilized |
| 38 | Scanners | 1.99 | 0.35 | Not Utilized |
| 39 | Digital versatile disk player | 1.06 | 0.36 | Somewhat Utilized |
| 40 | Electricity | 2.97 | 0.18 | Somewhat Utilized |

Table 2 revealed that 12 items out of the 20 were regarded by the respondents as not utilized while 8 item are somewhat utilized and no items were utilized. This conclude that information and communication technologies equipments are not utilized in the teaching and learning of business studies in secondary schools.

Research Question 3

What are the barriers militating against the utilization of ICT in the teaching and learning of business subjects in Senior Secondary School in Delta State?

To answer this research question, mean and standard deviation were used.

Table 3: Mean and Standard Deviation of Responses on the Significant of the Barriers Militating against the Utilization of Information and Communication Technologies in the Teaching and Learning of Business Subject in Senior Secondary Schools in Delta State. N=204

| S/N | Item Description | X | SD | Decision | X | SD | Decision |
|-----|--|------|------|-------------|------|------|-------------|
| 41 | Shortage of new technologies | 3.56 | 0.64 | Significant | 3.57 | 0.64 | Significant |
| 42 | Infrastructure-related barriers | 3.39 | 0.93 | Significant | 3.37 | 0.93 | Significant |
| 43 | Funding | 3.79 | 0.46 | Significant | 3.78 | 0.46 | Significant |
| 44 | Poor electricity supply | 3.60 | 0.67 | Significant | 3.59 | 0.66 | Significant |
| 45 | Attitude of Students towards the utilization of ICT | 3.55 | 0.67 | Significant | 3.58 | 0.60 | Significant |
| | Poor background of business technologies | 3.71 | 0.56 | Significant | 3.58 | 0.42 | Significant |
| 47 | Available new technologies that are not functional | 3.84 | 0.51 | Significant | 3.94 | 0.31 | Significant |
| | Attitude of business teachers towards the utilization of ICT | 3.47 | 0.74 | Significant | 3.47 | 0.74 | Significant |
| 49 | Lack of ICT skills by business teachers | 3.44 | 0.66 | Significant | 3.45 | 0.64 | Significant |
| 50 | Lack of skill manpower | 3.60 | 0.55 | Significant | 3.64 | 0.48 | Significant |
| 51 | Business teachers work load | 3.04 | 0.68 | Significant | 3.05 | 0.76 | Significant |
| 52 | Businessstudies teachers skills | 2.83 | 0.70 | Significant | 2.80 | 0.70 | Significant |
| 53 | Time table restrictions | 2.78 | 0.42 | Significant | 2.54 | 0.79 | Significant |
| 54 | Resistance to change | 1.55 | 0.50 | Significant | 1.50 | 0.52 | Significant |
| 55 | Management support | 3.66 | 0.54 | Significant | 3.64 | 0.56 | Significant |
| 56 | Policies | 2.80 | 0.82 | Significant | 2.77 | 0.82 | Significant |
| 57 | Resources | 3.89 | 0.32 | Significant | 3.73 | 0.53 | Significant |

Table 4 presents the findings on the barrier of teaching and learning of ICT in business studies in selected secondary schools in Delta State that were investigated. Of all the items, only one was viewed as somewhat significant; the others are significant. The findings indicated the presence of a serious problem where business studies students are constrained by myriads of barriers/challenges in the utilization of new technologies (ICT) to make them relevant in their careers/occupations on graduation.

Test of Hypothesis

Hypothesis 1

There is no significant difference between the mean responses of business teachers and students on the utilization of ICT in teaching and learning of business subject in junior secondary schools in Delta State.

Table 4: T-test Analysis of Hypothesis

| Responses | \bar{X} | SD | P | t-Cal | t-Crit | Decision |
|--------------|-----------|------|------|-------|--------|----------|
| Availability | 2.01 | 0.45 | 0.05 | 1.57 | 1.96 | Accepted |
| Utilization | 1.79 | 0.46 | | | | |

From Table 4, the t-cal value of 1.57 is less than the t-crit value of 1.96, suggesting that there is no significant difference between the mean responses of the respondents on the extent of availability and utilization of teaching and learning of ICI in business studies in the schools investigated. The null hypothesis is therefore accepted.

Hypothesis 2

There is no significant difference between the mean responses of business teachers and students of Business subject on the challenges facing the effectiveness of teaching and learning of ICT in Business subject in Junior Secondary Schools in Delta State.

Table 6: T-test Analysis of Hypothesis 2

| Respondents | \bar{X} | SD | N | Df | P | Cal | Crit | Decision |
|--------------------|-----------------------------|-----------|----------|-----------|----------|------------|-------------|-----------------|
| Teachers | 3.32 | 0.61 | 100 | 202 | 0.05 | 0.11 | 1.96 | Accepted |
| Students | 3.31 | 0.62 | 104 | | | | | |

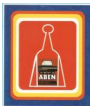
According to Table 6, the t-cal value of 0.11 is less the t-crit value of 1.96, indicating that there is no significant difference between the mean responses of the respondents on the barriers inhibiting the integration of ICT for learning into business education curriculum in X the institutions investigated. The null hypothesis is therefore accepted.

Discussion of Findings

The findings of the study showed that majority of the items were regarded to be unavailable. In other word, these components of new technologies required in business subject delivery were not as available as they should have been. This is detrimental not only to business subjects but also to education generally in a state desirous to be among the developed economic of 2020_s. Previous studies support the finding, for example Onojetah (2014) carryout similar study in Delta and Edo State schools, one of the net negative effects of unavailability is the product of students lacking skills and competencies in utilizing information and communication technologies while in school, world of work and in the wider society.

The findings of the study indicated that business studies students somewhat utilized new technologies because out of the 20 times, only 5 were utilized. The result ought to have been more of utilization and less of somewhat utilization. The implication is that new technologies were not utilized more appropriately. There is a correlation between availability and utilization of new technologies as the status of the former greatly influenced the latter. Therefore, where new technologies (ICT) were not available, it is most probable that their utilization would be non-existent. The studies by Madu and Pam (2011) corroborate the findings as they found out that, of 10 ICT items facilities identified as required for teaching and learning of business subject, seven were not utilized which only three were utilized.

Study also revealed that 16 out of the 17 factors regarded as barriers to the integration of ICT in business studies curriculum were significant. The results of research Questions 1 and 2 have much in common with this finding. Several studies have irrefutably showed that these factors were significant barriers hence present-day graduates have been described as lacking relevant skills and competencies in utilizing new technologies associated with modern society. In their studies, Bingimlas (2009) found a plethora of barriers that were classified as intrinsic, and AL-Alwani, (2005) extrinsic, supporting the present study. Studies by Akuchie (2008), Sam (2011), Basseyy (2007) and Kamb (2009) also identified unavailability and non-utilization of new technologies as barriers to new technologies integration in the teaching-learning process.



The test of the two hypotheses showed that they were accepted. Utilization was found to be a function of availability. Therefore, where there was unavailability there will be no utilization because they are closely related. The study by Madu and Pam (2011) supports the findings. For the second hypothesis, there was no doubt that several barriers limited the integration of technology in business of subject. Previous studies agreed with this finding, (Aduwa-Ogiegbaen and Iyamu, 2005; Madu and Pan, 2011), Extensive literature and studies reviewed by Bingimlas (2009) also corroborate this finding. Unavailability and non-utilization of ICT facilities in business subjects in particular and education generally in Nigeria which serve as barriers, has been major contending issues.

Conclusion

Education in the 21st century is premised on the availability and utilization of ICT facilities which is new technology in serious minded countries; they are inevitable in business studies curriculum that is education for self employment and for career in the world of work, requiring demonstrable skill and competencies. However the study revealed that non-availability and utilization in Delta State in particular and Nigeria landscape in general has resulted from several barriers. It is thus important to give serious attention to the findings of this study, if business graduates are to be relevant in the global arena dominated by competitiveness and new technologies in every facet of the society.

Recommendations

The following recommendations are pertinent:

The provision of ICT facilities with their peripherals that are adequate and functional for teaching and learning of business subjects should be addressed by government at all levels now before it is too late;

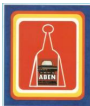
All policies relating to the utilization of ICT facilities in teaching and learning of business subjects at secondary school level of education system should be fully implemented in order to raise the level of ICT literacy;

Adequate and sustainable funding for ICT facilities should be implemented. In doing this, all stakeholders, including governments at all levels, the private sector and other beneficiaries should be made to contribute their share of the finding to be transparently, equitably and jointly determined by governments at all levels and the stakeholders;

It is no longer news that electricity supply to power the integration of ICT facilities is not available. Similarly, the problem of infrastructural decay has been well-documented. This is the time for government to address these problems for the desired results.

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