Academic Staff Awareness, Preparedness and Strategies in Using ICT for Teaching Business Education in Teacher Education Institutions in Delta State

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Abstract

This study determined academic staff awareness, preparedness and strategies in using ICT in teaching business education in teacher education institutions in Delta State. Three research questions guided the study. The study employed the descriptive survey research design. Population of the study comprised 120 business education academic staff of teacher education institutions in Delta State. A questionnaire containing 38 items and designed on a 4 point scale was used to collect data for this study. The instrument was validated by three experts of Business Education and Measurement and Evaluation. Reliability of the instrument was determined through a pilot-test conducted by the researcher on the instrument using 12 academic staff in business education from three teacher education institutions in Anambra State. The result was found to have a reliability coefficient index of 0.72 using Cronbach Alpha analysis which is deemed high enough. Data generated were analyzed using mean score at 2.50 rating and standard deviation. From the findings of the study, it was discovered that majority of the business education academic staff were not knowledgeable in using ICT in teaching business education; but they were highly interested and prepared to use ICT in teaching business education at the teacher education institutions. Based on the findings, recommendations were made and among such included that: Federal and State Government should support the use of ICT in teacher education institutions through adequate funding and budgets which will lead to procurement of the necessary ICT tools for teaching business education. This should also be accompanied by effective implementation of ICT policy in teacher education to aid academic staff become knowledgeable and prepared in using ICT in the classrooms. Institutions' leadership must adopt workable ICT facility management and maintenance culture at the teacher education institutions for effective utilization and sustenance of these facilities.

Keywords*: Awareness, Knowledge, Preparedness, ICT, Strategies, Teaching, Business Education, Academic Staff*

Introduction

Business education is an instrument for both socio-economic change and national development. It is vital for the promotion of a healthy and progressive society. Business education maximizes the creative potentials and skills of the individual for self-fulfilment

and development of the society. Onyesom and Onajite (2013) see business education as the intellectual and vocational preparation of people for earning a living in the contemporary industrial and business environment. It is the education for the acquisition and development of skills and competencies, attitudes which are necessary for efficiency of the economic system. Business education therefore encompasses education for office occupation, business teaching, business administration, economic understanding and entrepreneurship (Onyesom & Onajite, 2013). Considering the nature of business education deems it a necessity that teaching and learning should be made effective through the support of Information and Communication Technology (ICT). To achieve both the general philosophy and goal of education for national and economic sustainability through business education means that teaching and learning must be student-centred, activity-based, and experiential through the use of ICT. The Federal Republic of Nigeria – FRN (2014) has recognized the use of ICT in teaching and learning as part of educational support services by enlisting under section 8, p.60 of the National Policy on Education (NPE) document that:

> *Government shall provide appropriate Information Communication Technology facilities to support the educational system. Government shall provide facilities of Information Technology at all levels of education. Also, radio and television educational broadcasting shall form a feature of the educational support service system…….. (FRN 2014)*

From the foregoing statements, this shows that ICT has been recognized and accepted as an effective tool to be used in all the education institutions including teacher education. ICT is a collection of tools and devices used for particular tasks, eg, publishing, course delivery, transaction processing. It is the combination of the potentials of computer telecommunication and electronic media using the digital technology. It is also an organized set of equipment (like a 'workshop') for working on information and communication. Information Communication Technologies (ICTs) according to Adeyemo (2010) is defined as a set of technological tools and resources used to communicate, create, disseminate, store and manage information. These technologies to Adeyemo include computers, the internet, broadcasting technologies (radio and television). Custin (2002) defined ICT as a set of activities that facilitate electronic means, the capturing, storage, processing, transmission and display of information. Examples of ICT tools useful in the classroom teaching as identified by Euridice (2002) and Olowoyeye (2016) includes the use of multimedia, cine projectors and recorders, computers, internet, and devices such as video, camera and mobile telephone. It includes other devices such as digital still cameras, video cameras and others, which are used in education and mobile telephones seemingly best known in education for their value (Adewa-Oguiebgen & Iyamu, 2005). These ICT tools has potential not only in introducing new teaching and learning practices, but also for acting as a catalyst to revolutionize the education system. They can empower both business education teachers and learners and promote the growth of skills necessary for 21st century work place (Tricano, 2005; UNESCO,

2014). In essence, ICT create greater enthusiasm for learning, aids team work and increases students academic performance. It motivates students and draw their attention towards learning amongst students, prepare learners for the real world, aids students lifelong learning, provide distance learners country-wide with online educational materials, and provide learners with additional resources to assist resource-based learning (Mikre, 2011). The above statements however show that providing qualitative business education in the teacher education institutions is largely dependent on the use of ICT in the teaching and learning. This calls for the knowledge and preparedness of academic staff in using ICT in teaching business education.

The complicating matters as indicated by UNESCO (2014) is that the integration of ICT into education and teaching-learning in the classroom is frequently resisted by teachers and most times their unions, particularly in countries with an aging, underpaid teaching workforce, and where there has been inadequate teacher training and preparation. In these circumstances, a lack of motivation, knowledge and unpreparedness to learn new skills, teaching and learning methodologies may occur, which is often compounded by feeling threatened by newer forms of ICT that students will understand better than teachers do. This concern has been recognized by few education stakeholders in Nigerian education system, owing to the fact that high proportion of "older" teachers are in the last quartile of their teaching career. Contrarily, countries where ICT is widespread require greater proportions of teachers that can teach how to use ICT as well as use it in their daily teachings and endeavours (UNESCO, 2014). Knowledge and preparedness of teaching staff to use ICT in teaching is seen from the point of view that they are aware of the use of ICT in teaching delivery and as such have the ability/skills to effectively utilize and apply ICT in teaching business education.

Preparedness deals with the ability or willingness to do something especially a difficult task. Academic staff knowledge and preparedness in use of ICT includes their ability to boot the computer, effectively use most of the soft-wares and applications to an extent, solve mathematical applications with ICT and also use ICT in research and collaborations. Daramola (2014) pointed out that when business education lecturers have knowledge and are prepared to use ICT, they exhibit such competences, skills and abilities to browse for materials on internet to improve their teaching and learning; exercise high level of competency in the use of power point in teaching and learning business education courses; teach practical courses in business education with overhead projector; use Microsoft word in the classroom while teaching and learning; give assignments to students using Microsoft Excel; and use teleconferencing gadgets for lecturers.

Onyesom and Umoeshiet (2013) defined strategy as the technique or mechanism put in place to maintain the degree of excellence of a product or service. Okwuanaso and Nwazor (2000) viewed strategy as tactics for achieving an objective. Similarly, Osuala (1998) argued that strategy is a broad and basic plan of action by which an organization intends to reach its goals. Strategy is a means for doing something or to do something; a plan that is intended to

achieve a particular purpose or the process of planning something or carrying out a plan in a skilful way. As applies to academic staff use of ICT in teaching business education in teacher education institutions, strategy is a method or plan chosen to bring about effective teaching of business education in order to achieve the goals of teacher education institutions in Delta State, Nigeria. Therefore, teacher education institutions according to Enueme (2014) are training institutions that prepares and train student-teachers and in-service teachers to acquire the competencies and skills that will enable them practice efficiently in the teaching profession both in the present and future. These institutions include faculties of education at the universities, school of education at the polytechnics and colleges of education. On the basis of the foregoing, the researcher is concerned with determining academic staff knowledge, preparedness and strategies in using ICT in teaching business education in teacher education institutions in Delta State.

Statement of the Problem

There has been a growing concern about the persistent problem of academic staff of business education at the teacher education institutions not applying information and communication technology (ICT) in teaching and learning. ICTs provide both students and teachers with more opportunities in adapting learning and teaching to individual needs, hence, the society is forcing teacher education institutions to aptly respond to this technical innovation. In essence, improving the quality of business education and training is a critical issue considering the level educational expansion in Nigeria. Haddad cited in Olowoyeye (2016) observed that ICT enhances the quality of business education by increasing learner motivation and engagement (through videos, television and multimedia computer software that combine text sound and colorful moving images), facilitating the acquisition of basic skills (through drill and practice applicable to typing and shorthand) and enhancing teacher training (web-based courses through the internet, satellite based one way video and two way audio conferencing by telephone email and fax).The introduction of ICT in business education programme offers the opportunity for students to learn by themselves precluding the need for teachers. Report finding from studies like Olowoyeye (2016) revealed that using ICT in teaching and learning of business education has not been fully incorporated and this negatively impacted on students' learning. Unfortunately, this situation is also similar to what exists at the teacher education institutions in Delta State where majority of the academic staff still find it difficult to effectively use ICT in the classroom. Could this be that the inadequacies towards their exposures to the use of ICT would have been responsible for the dismay? This is what the present study sought to establish. Notably, Olibie and Ezenwanne (2013) and Olowoyeye (2016) argued that there is no compelling evidence to support use of ICT, strategies needs to be adopted in order to utilize such approaches system-wide. The changing role of teachers, as we saw before (which also calls for ICT utilization in teaching business education), is an essential part of this changing process - on academic staff

knowledge and preparedness to use ICT in their teaching task. Their role should turn in a 'guide of learning' better than in a 'font of knowledge'. As ICT are incorporated in education the trend of a classroom and textbook based educational system is becoming more and more outdated. In particular, this present study has concerns about a general lack of efficiency in the use of ICT in teaching business education in teacher education institutions, which is an important focus for both educational and national development. Therefore, to fill the present gap which necessitates creating a scenario where a culture of using ICT in teaching business education at teacher education institutions is fully developed and imbibed by academic staff, thus has warranted this study. Thus, calling for the need towards investigating academic staff knowledge and preparedness and strategies in using ICT in teaching business education in teacher education institutions in Delta State, which is also the problem of this study.

Purpose of the Study

This study was designed to determine academic staff knowledge, preparedness and strategies in using ICT in teaching business education in teacher education institutions in Delta State. The specific objectives of the study aimed at determining:

1. Academic staff knowledge in using ICT in teaching business education in teacher education institutions in Delta State.
2. Academic staff level of preparedness towards using ICT in teaching business education in teacher education institutions in Delta State.
3. Strategies perceived by academic staff that will improve their knowledge and preparedness of using ICT in teaching business education in teacher education institutions in Delta State.

Research Questions

The following research questions guided the study:

1. To what extent are academic staff knowledgeable in using ICT in teaching business education in teacher education institutions in Delta State?
2. What is the level of preparedness of academic staff towards using ICT in teaching business education in teacher education institutions in Delta State?
3. What strategies are perceived by the academic staff that would improve their knowledge and preparedness of using ICT in teaching business education in teacher education institutions in Delta State?

Methodology

The descriptive survey design was adopted for the study and the population of the study consists of all the 120 business education academic staff in the 5 teacher education

institutions in Delta State. They are Delta State University Abraka, Colleges of Education Asaba, Agbor, Warri and Mosogar. The entire population was used for the study because of its manageable size. Therefore, there was no sample.

A 38 item questionnaire designed on 4-point scale was used to collect data for this study. The instrument was validated by two experts from Business Education and one from Measurement and Evaluation, both in Nnamdi Azikiwe University, Awka. The reliability of the instrument was determined through a pilot-test conducted by the researcher on the instrument using 12 academic staff in business education from three teacher education institutions in Anambra State. The result was found to have a reliability coefficient index of 0.72 using the Cronbach Alpha analysis. The index was considered high enough for the instrument to collect the necessary data for the study.

The research instrument was finally administered and collected by the researcher with the help of eight research assistants who were academic staff of various teacher education institutions selected for the study. These research assistants received briefings on how to administer the instrument on the respondents. Distribution of the instrument took a period of four weeks and thereafter computation was done. All copies of the questionnaire were retrieved and this gave a return rate of 100%. Data generated were analyzed using mean score at 2.50 rating and standard deviation. Any item rated above or equal to the mean bench mark of 2.50 was regarded as high extent/agree while items rated below the mean bench mark (2.50) was regarded as low extent/disagree.

Results

The results of the data analysis are presented in the following Tables according to the research questions raised for the study.

Table 1: Mean Score and Standard Deviation on Academic Staff Knowledge in Using ICT in Teaching Business Education in Teacher Education Institutions in Delta State. **N = 120**

S/N	ITEMS **Please share your opinion concerning your knowledge in using ICT to teach business education**	VHE	HE	LE	VLE	X	STD	DECISION
1	I can effectively boot and turn on the computer without any assistance.	104	103	15	25	3.16	0.93	**High Extent**
2	I am able to exercise a great deal of competency in the use of power point to do my presentations in business education.	37	44	101	65	2.21	1.00	**Low Extent**
3	I use the Microsoft word to prepare my lesson in business education.	18	22	105	102	1.82	0.87	**Low Extent**
4	I effectively operate and use the projector during all	20	35	118	74	2.00	0.87	

	my teachings in business education.							**Low Extent**
5	I am efficiently able to browse the internet and surf for information that will enhance my teaching in business education.	26	36	86	99	1.96	0.98	**Low Extent**
6	I do all my mathematical calculations in business education using Microsoft excel.	23	41	95	88	2.00	0.95	**Low Extent**
7	I can use most of the software packages like SPSS to analyze data for my research work in business education.	22	30	103	92	1.93	0.92	**Low Extent**
8	I supervise business education students' projects online.	19	33	111	84	1.95	0.88	**Low Extent**
9	I use the Corel Draw for my drawings and designs in business education.	17	23	102	105	1.81	0.87	**Low Extent**
10	I am able to use computer graphics when preparing lesson in business education.	16	43	87	101	1.89	0.91	**Low Extent**
11	I can interact and collaborate with other academic staff in business education using the computer.	13	24	96	114	1.74	0.84	**Low Extent**
12	I am knowledgeable with the use of teleconferencing to engage students in most of the business education lessons.	15	29	103	100	1.83	0.86	**Low Extent**
13	I read business education students' assignments online.	27	34	93	93	1.98	0.98	**Low Extent**
14	I can effectively utilize my smart phone to search for information concerning business education	94	133	13	7	3.27	0.69	**High Extent**
	OVERALL MEAN AND STANDARD DEVIATION =					2.11	1.01	**Low Extent**

Results presented in Table 1 revealed that only items 1 and 14 rated above the acceptable mean score of 2.50, indicating that the respondents' responded positively in agreement with the statements. All other items from 2-13 rated below the acceptable mean score to show negative reactions from the respondents. The overall mean score of 2.11 and standard deviation of 1.01 also indicated that academic staff knowledge in using ICT in teaching business education in teacher education institutions in Delta State was to a low extent.

Table 2: Mean Score and Standard Deviation on Academic Staff Level of Preparedness towards Using ICT in Teaching Business Education in Teacher Education Institutions in Delta State

N = 120

S/N	ITEMS	SA	A	D	SD	X	STD	DECISION
	Please share your opinion concerning your preparedness in using ICT to teach business education							
15	I am prepared to get a personal laptop and use computer to do my teaching in business education.	119	113	10	5	3.40	0.67	**Agree**
16	I will always be ready to use power point for my presentations in business education.	141	86	7	13	3.44	0.79	**Agree**
17	I would love to prepare my topics in business education at all times with the Microsoft word.	120	108	9	10	3.37	0.74	**Agree**
18	I will effectively operate and use the projector to do most of my presentations in business education.	102	121	17	7	3.29	0.72	**Agree**
19	I am prepared to always browse the internet and surf for information that will enhance my teaching in business education.	98	138	7	4	3.34	0.61	**Agree**
20	I am ready to carry out my mathematical calculations in business education using Microsoft excel.	105	111	15	16	3.23	0.83	**Agree**
21	I am willing to analyze data for my research work in business education using software packages like SPSS.	116	107	13	11	3.33	0.77	**Agree**
22	I ready to use the computer email system to supervise business education students' projects online.	118	122	3	4	3.43	0.61	**Agree**
23	I am prepared to use the Corel Draw for my drawings and designs in business education.	113	110	12	12	3.31	0.78	**Agree**
24	I am ready to use computer graphics when preparing all lessons in business education.	109	127	8	3	3.38	0.61	**Agree**
25	I prepared to interact and collaborate with other academic staff in business education using the computer.	110	125	6	6	3.37	0.65	**Agree**
26	I am willing to use teleconferencing to engage	107	128	4	8	3.35	0.67	

S/N	ITEMS	SA	A	D	SD	X	STD	DECISION
	students in most of the business education lessons presented in the lecture room.							Agree
27	I am prepared to constantly engage and attach myself in any ICT training programmes so as to improve my skills and competences in ICT usage and applications.	137	95	11	4	3.48	0.66	Agree
	OVERALL MEAN AND STANDARD DEVIATION =					**3.36**	**0.71**	**Highly Prepared**

Results presented in Table 2 revealed that all the items from 13-25 rated above the acceptable mean score of 2.50, indicating that the respondents' responded positively in agreement with the statements. None of the items rated below the acceptable mean score to show negative reactions from the respondents. The overall mean score of 3.36 and standard deviation of 0.71 also indicated that academic staff level of preparedness towards using ICT in teaching business education in teacher education institutions in Delta State was high, in which many of them attested to.

Table 3: Mean Score and Standard Deviation on the Strategies Perceived by Academic Staff that will Improve their Knowledge and Preparedness of Using ICT in Teaching Business Education in Teacher Education Institutions in Delta State N = 120

S/N	ITEMS	SA	A	D	SD	X	STD	DECISION
	Please indicate your agreement on the strategies perceived by business education academic staff that will improve their knowledge and preparedness of using ICT in teaching business education							
28	Leadership and management of teacher education institutions should provide the requisite ICT facilities in teaching business education.	105	131	5	6	3.36	0.64	Agree
29	Levels of Government (such as Federal and State) should effective funding institutions for ICT provision and procurement.	116	117	10	4	3.40	0.65	Agree
30	Business education curriculum should incorporate ICT and its applications.	104	118	16	9	3.28	0.74	Agree
31	Professional development of business education academic staff for ICT utilization.	113	110	13	11	3.32	0.77	Agree
32	Encouraging private institutions to support ICT awareness creation and utilization in teacher	107	135	3	2	3.40	0.56	

	education institutions through orientation and other training programmes.							**Agree**
33	Increasing institutional collaborations and communication for business education academic staff to use ICT.	125	107	11	4	3.43	0.66	**Agree**
34	Effective implementation of ICT policy in teacher education institutions.	114	122	8	3	3.40	0.62	**Agree**
35	Ensuring adequate availability of ICT facilities and tools in institutions.	103	116	23	5	3.28	0.71	**Agree**
36	Transforming administrative functions and classroom activities in business education with the use of ICT.	100	105	28	14	3.18	0.84	**Agree**
37	Introducing development levy for ICT procurement in business education.	99	127	13	8	3.28	0.71	**Agree**
38	Using ICT during presentations at conferences, seminars workshops and other gathering to motivate business education academic staff towards using ICT.	132	88	17	10	3.38	0.79	**Agree**
	OVERALL MEAN AND STANDARD DEVIATION		**=**			**3.34**	**0.71**	**Agree**

Results presented in Table 3 revealed that all the items from 28-38 rated above the acceptable mean score of 2.50, indicating that the respondents' responded positively in agreement with the statements. None of the items rated below the acceptable mean score to show negative reactions from the respondents. The overall mean score of 3.34 and standard deviation of 0.71 also indicated that academic staff responded positively to all the strategies perceived that will improve using ICT in teaching business education in teacher education institutions in Delta State.

Discussion of the Findings

ICT is one of the important educational resources that are useful for teaching business education at the teacher education institutions. Finding of Table 1 indicated that academic staff knowledge in using ICT in teaching business education in teacher education institutions in Delta State was to a low extent. This showed that majority of the business education academic staff in the teacher education institutions had little or less knowledge of using ICT in teaching the subject. Majority of the academic staff can only boot and turn on the computer and also use their smart phones to search for information concerning business education. Rather they showed their inexperience and lack of knowledge in use of ICT in areas like the use of power point, Microsoft word, projector, internet, Microsoft excel, Corel

draw, computer graphics, on line students' assessment and project supervision, to enhance their teaching and presentations in the classroom.

This finding agrees with Daramola (2014) study which discovered that some lecturers are not skilled in using ICT in teaching their students. This is why such lecturers prefer to stick to the traditional method of teaching. This is contrarily to the finding of Olibie and Ezenwanne (2013) study which discovered that ICT is particularly useful in business education as a tool for curriculum delivery, assessment, research, and hands-on-experience.

Findings of Table 2 revealed that academic staff level of preparedness towards using ICT in teaching business education in teacher education institutions in Delta State was high. This result indicated that majority of the business education academic staff in the teacher education institutions are highly prepared towards using ICT in teaching the subject. Many of these academic staff attested the following that they are prepared to get a personal laptop and use computer to do their teaching in business education. They will always be prepared to use Power Point and Microsoft word for their presentations in business education. They are willing to effectively operate and use the projector to do most of their presentations in business education. They are also prepared to always browse the internet and surf for information that will enhance their teaching in business education. They were prepared to interact and collaborate with other academic staff in business education using the computer. They were also willing to use teleconferencing to engage students in most of the business education lessons presented in the lecture room. And were prepared to constantly engage and attach myself in any ICT training programmes so as to improve my skills and competences in ICT usage and applications.

The above finding concurs with the work of UNESCO (2014) which identified that ICT is one way to which human capacity building can be guaranteed in business education. Both students' and the teaching staff stand to gain and benefit when ICT is effectively utilized in teaching and learning of business education in the classroom. To the teaching staff, ICT offer the opportunity for more student-centred and constructivist teaching, provide greater opportunity for teacher-to-teacher communication and collaboration, provide opportunities for multiple technologies delivered by teachers, provide teachers with new sources of information and knowledge, and helps teachers to explain difficult concepts. ICT helps teachers to organize their work through digital portfolios or projects. In addition, studies have shown that ICT has significant impact on teachers and teaching processes. Teachers have become more convinced that educational achievements of pupils are due to good ICT use. In fact, high percentage of teachers in Europe (86%) states that pupils are more motivated when computers and Internet are being used in class (Mikre, 2011). On the students' part ICT provides greater opportunity for student-to-student communication and collaboration, give greater exposure to vocational and workforce skills for students, aid information retention and enables students to do the assignments and homework.

The finding of Table 3 revealed all the strategies perceived by the academic staff which will improve using ICT in teaching business education in teacher education

institutions in Delta State. This result showed that majority of the business education academic staff in the teacher education institutions exhibited positive reactions towards the strategies which involved leadership and management of teacher education institutions to provide the requisite ICT facilities in teaching business education. Levels of Government (such as Federal and State) should effective funding institutions for ICT provision and procurement. Business education curriculum should incorporate ICT and its applications. The finding concurs with the studies of Amiaya (2014), Ndiomu, Alabi and Otobo (2012), and Olibie and Ezenwanne (2013) which reported that quite a number of challenges hinder effective adoption of ICT in teaching business courses and this include, lack of access to the internet, lack of access to e-learning hardware and software facilities, such as computer, multimedia projectors among others. This indicates that business education curriculum at all tertiary levels should be reviewed to incorporate e-learning technologies to facilitate delivery, preparedness and knowledge/skill acquisition by the teachers and recipients.

Conclusion

The role of ICT in teaching and learning delivery of academic staff of business education cannot be overemphasized. ICT involves the use of information, mechanical, technological and communication devices to facilitate teaching and learning. This calls for attention to be paid on use of ICT to achieve instructional objectives at the classroom level; likewise the demands of education in this technological age and 21st Century. It is however important that academic staff in teaching business education explore different ICT tools in order to aid them meet up with the currents needs of learners and their teaching task. For this reasons academic staff should be knowledgeable and prepared to use ICT in teaching their courses at institutions especially in business education. This study has necessitated the following recommendations enlisted below.

Recommendations

1. Federal and State Government should support the use of ICT in teacher education institutions through adequate funding and budgets which will lead to procurement of the necessary ICT tools for teaching business education. This should also be accompanied by effective implementation of ICT policy in teacher education to aid academic staff become knowledgeable and prepared in using ICT in the classrooms.

2. Institution leadership must adopt workable ICT facility management and maintenance culture at the teacher education institutions for effective utilization and sustenance of these facilities.

3. Professional development and training/retraining programmes should constantly be arranged for academic staff proficiency in ICT applications by the Government, institutional representatives and various Commissions of teacher education institutions. This also calls for collaboration with private institutions and non-governmental agencies to participate actively towards boosting academic staff knowledge and preparedness in the use of ICT in teaching business education at the teacher education institutions.

References

Adewa-Oguiegben, S. E. & Iyamu, E.O.S. (2005). Using information and communication technology in secondary school in Nigeria. Problem and prospects. *Educational Technology and Society, 8 (1).*

Adeshina, A. (2007). *Understanding business education.* Zaria: Micsons Press.

Adeyemo, S. A. (2010). The impact of information and communication technology (ICT) on teaching and learning of physics . *International Journal of Education Research and Technology, 1 (2) 48-59.*

Amiaya, A. O. (2014). Strategies for improving the provision of ICT resources in office technology and management programme in the Polytechnics in Delta State, Nigeria. *American International Journal of Contemporary Research, 4 (1), 291-296.*

Curtin, R. (2002). Promoting youth employment through information and communication technology (ICT). Retrieved from http:///www/ybiz.com/abizweb/resourcecenter ICT and Youth employment RC. Pdf

Daramola, R. (2014). Influence of information and communication technology on teaching of business education courses in colleges of education in north-west geo-political zone, Nigeria. *Unpublished masters degree thesis,* submitted to School of Post Graduates Studies, Ahmadu Bello University, Zaria.

Enueme, C. P. (2014). *Theory and practice of child friendly schools. For schools and classroom managers.* Enugu: Chembus Communication Ventures.

Euridice S. (2002). *Key competencies: A developing concept in general compulsory education. The information network on education in Europe.* Retrieved from 146pponline:http://www.enrydice.org/.

Federal Republic of Nigeria – FRN (2013). *National policy on education.* Lagos: NERDC.

Gokhe, M. (n.d). *Concept of ICT.* Retrieved from http://www.tscermumbai.in/resources.

Hunt, D. P. (2003).*The concept of knowledge and how measure it.* Retrieved from http://andrewvs.blogs.com/usu/files/p100.pdf.

Kulik, J.A. (1994).Meta-analytic studies of findings on computer-based instruction. In J.E.L.Baker & H.F.O'Neil (Eds.). *Technology assessment in education and training.* Hillsdale, NJ: Lawrence Erlbaum.

Mikre, F. (2011). *The roles of information communication technologies in education Review article with emphasis to the computer and internet.* Retrieved from http://www.ajol.info/index.php/ejesc/article/.

Ndiomu, K., Alabi, E. B. & Otobo, P. (2012). Availability of resources for business education programmes as new frontier and paradigm for qualitative education. *Niger Delta Journal of Education (NIDJOE), 3 (1), 64-70.*

Okwuanaso, S. I. & Nwazor, J. C. (2000). *Instructional strategies in business education.* Awka: Ikenga Publishers.

Olibie, E. I. & Ezenwanne, D. N. (2013). Information and communications technology awareness and use for home economics curriculum delivery in Anambra State: Teachers' improvement strategies. *British Journal of Arts and Social Sciences, 13 (1), 107-120, ISSN: 2046-9578.* Retrieved from http://www.bjournal.co.uk/.

Olowoyeye, G. B. (2016). The role of information and communication technology (ICT) toward teachers' education in South West Nigeria: Impediments and the way forward. *European Journal of Computer Science and Information Technology, 4 (1), 56-62.* Retrieved from http://www.eajournals.org/.

Onyesom, M. & Onajite, G. O. (2013). Re-engineering business education programme through effective school-industry collaboration for students' capacity building. *Nigerian Vocational Association Journal (NVAJ), 18 (1), 197-206.*

Onyesom, M. & Umoeshiet, E. A. (2013). Strategies considered effective for quality assurance in business education programme in Nigerian universities. *Nigerian Journal of Business Education*, 1(2), 141 – 150.

Osuala, E. C. (1998). *Fundamentals of Nigeria marketing.* Onitsha: Cape Publishers International Limited.

Tricano, M. (2005). *Knowledge Maps ICTs in education (on-line).* Washington Dc: for Dev/worldbank.   Retrieved   from http://wwwinfodev.org/files/1062fileknowledgemaps.

UNESCO (2014). *Information and communication technology (ICT) in education in Asia. A comparative analysis of ICT integration and e-readiness in schools across Asia.* Retrieved from www.uis.unesco.org/.