



# **Influence Of ICT Innovations In Vocational Education For Achieving Sustainable Development In Anambra State**

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## **ABSTRACT**

The main purpose of the study was to determine the influence of ICT innovations in vocational education for achieving sustainable development in Anambra State. The study was guided by two research questions and four null hypotheses. A census survey research design was adopted for the study. The population used for the study was 281 teachers of vocational education in four tertiary institutions offering vocational education to students in Anambra State. There was no sampling due to the manageable size of the population. The instrument used for data collection was a 21-item questionnaire grouped into two sections according to the research questions that guided the study. The items were structured in four-point rating scale. The instrument was validated and the reliability of the instrument was determined using Cronbach Alpha which yielded 0.76. Mean, standard deviation and t-test statistics were the statistical tools used. Based on the data analysis, the study identified that ICT innovation influences the teaching and skill learning in vocational education for sustainable development. Based on the findings of the study recommendations were made among which include; teachers of vocational education should be given in-service training on the ICT in teaching for sustainable development.

**Keywords:** ICT, Innovations, Vocational education, Sustainable Development

## **INTRODUCTION**

Education and training have been digitalized in contemporary society as a result of innovations especially in Information and Communication Technology (ICT). Education is a dynamic process that gears towards the transfer of knowledge, skill, attitude, values and beliefs from one person to another. It is usually conducted in a formal or informal setting. In whichever way, education in present society depends on the use of technological media in promoting change in behaviour of the learners. In formal Education system, ICT facilities are used in teaching as they provide a more effective means of communication, transfer of learning and promotion of digital learning experiences. Odo (2017) pointed that evolution of ICT in the educational setting has influenced the curriculum content and methodology as practical skill-based education suffer set back. The use of ICT innovation in teaching some courses in tertiary institution has given rise to blended learning. Blended learning combines online or electronic base learning with face to face learning.

The concept of blended learning was conceived as a result of ICT innovation in teaching and learning processes given educational system the opportunity to accommodate the increasing population of students without compromising the quality of knowledge and skills provided. ICT according to European Union in Okafor (2017) is the application of computer, internet, radios, digital televisions, projectors among other that teachers and instructors can use as pedagogical tools to impact into the learners. ICT encompasses a broad range of technologies including hardware, software, networking and digital technology tools. It plays a central role in modern life, powering everything from business operations and education to healthcare and entertainment. ICT enables connectivity, collaboration and access to information across the globe. The use of ICT in the classroom teaching and learning is very important for it provides opportunities for teachers and learners to operate, store, manipulate and retrieve information (Okoriocha, Okparaeke & Ilojeme, 2017).

ICT innovation in teaching and learning processes has transformed the instructional activities encouraging independent and active learning with self-responsibility for learning such as in distance learning. ICT innovation in education is the practical use and implementation of digital tools and ideas that results to introduction of new methods, services and product. Onoh in Mbah (2016) stated that innovation is refers to something new or doing old thing in a new way such as an invention or the practice of developing and introducing new things. It may also be the process of creating or introducing something new or significantly improving existing ideas, products, process or services. The ICT innovation as used in teaching and learning motivates teachers and students to continue learning outside school hours, plan and prepare lessons and design materials such as course content delivery and facilitate sharing of resources.

The improvement and innovations in the ICT facilities provides capacity not only to engage students in instructional activities to enhance their learning, but also help in solving problems in order to increase their cognitive skills. Among the ICT innovations in teaching and learning according to Oluka, Odeluga and Mbah (2021) include, Online class, Zoom application, whatsapp, facebook like chart, projectors and slides, search engine, online and internet resources, other web 2.0 technology, wire and wireless connectivity, Flip Grid, interactive viddle, automation (Zapier, Webhooks and triggers), App-Based learning, Blockchain, Virtual reality, Video streaming, learning stimulation etc. The ICT innovations in teaching and learning facilitate collaboration, social computing and creativity for individuals and organizations (Okafor, 2017). Olaniyi (2022) noted that using ICT innovative tools for old processes does not create change or improvement. Institutions ought to facilitate the emergence of innovative learning approaches with the ICT innovative tools such as in the case of blended learning. The development of innovative learning approaches should be carried out by (i) making sure that learners, teachers. Administrators, students and parents are aware of the innovations and (ii) by supporting them in curricula, teaching guidelines and teacher training.

The utilization of ICT improves student's problem-solving skills, provide opportunity for students to construct learning, increase collaboration and increase preparation for career and vacation. The advent and adoption and adoption of ICT innovations in digital age has drastically transformed every aspect of education and skill training including vocational education. Vocational education such as other educational programme utilize ICT innovative tools to communicate, share and impart learning to the students on vocational competency development, skill acquisition and general awareness in digital skill perfection.

Vocational education is the type of education that prepares students for work in a specific trade, craft and or professional vocations such as technology, accountancy, nursing, art work and architecture (Miller, 2019). It is the training that emphasizes knowledge and skills needed to become competent in a particular field. Vocational education as explained by Mbah, Nnadi, Ohagwu and Aduhuekwe (2020) is a training that basically focuses on practical application of the skills learned or acquired by hands on instruction in a specific trade. In Anambra State, vocation educations are offered at secondary and tertiary education level. Among the areas that students acquire skills and competencies are Agricultural Science, Computer Science, Automobile Technology, Mechanical Technology, Metal Work, Electrical/Electronic, Building

Technology, Office Management, Business Management, Accounting, Home Economics and many more. Vocational education and trades institution have been growing prominently; this has to be repositioned properly with more innovative and highly skilled workers that will utilize ICT innovation solve problems in its teaching and learning processes. Teaching according to Mbah and Umurhurhu (2016) is any activity that triggers excellent learning and makes the learner to acquire knowledge and think independently. Teaching and learning are two different but simultaneous actions that take place during interaction of teachers and students. Learning is said to have taken place when there is change in behaviour. The assessment of learning is through a permanent change in students' behaviour.

Using ICT innovations in teaching and learning of vocational education involves series and sequential activities planned to cause a desirable change in the skill performance of students. The study therefore considers the impact which ICT innovations have in teaching vocational education and in skill learning of vocational education. That is the influence on students as well as the teachers. The integration of ICT innovation in presentation and distribution of instructional content are carried out through web-environment and system offering an integrated range of tools to support learning communication (Okeke, 2019; Eze & Ogbuegbu, 2017). In learning, ICT contribute to effective learning through expanding access, promoting efficiency and improving the quality of instructional understanding. The influence of ICT in vocational skill teaching could be seen in; a) presentation of images used in teaching and improving the retentive memory of the students, b) explaining complex tasks/instructions and ensure students comprehension and c) creating interactive classes that improves student's attention and concentration. There is need to adopt ICT innovation in vocational education in that it facilitates digital skill development needed for achieving sustainable development.

Vocational education for sustainability is giving the people the skills and knowledge they want without compromising quality of life in future. Sustainability focus on examining the longer-term effects of the action's humanity takes and asking questions about how it may be improved. Sustainable development is the strategy to growth that meets current needs without compromising the ability of future generations to meet their own needs. Sustainability and sustainable development focus on balancing that line between competing needs, the need to uninterruptedly move forward technologically and the needs to provide food on the table for oneself and others (Mason, 2017). The use of ICT innovations in the teaching and learning of vocational education programme facilitate the achievement of sustainable development in the State. Victoria (2015) observed that ICT innovation helps in vocational digital skill acquisition for self and paid employment that ensures sustainability in economic development. Teaching and learning of skills in vocational education may have been improved as a result of ICT as electronic based facilities could be used to teach and equally learners can learn at their own pace and convenience. The experience of vocational educators was used in testing the hypotheses. Experience based on the years of services may influence their views on the influence of ICT innovations in vocational education teaching and skill learning for achieving sustainable development. For instance, Mbah and Elobuikwe (2016) reported that teachers' experiences were significantly related to their teaching effectiveness and adoption of ICT facilities in technology education. This eliminate the promise that learning time equal classroom intervention by teachers. It is against this background that the study sought to ascertain the influence of ICT innovations in vocational education teaching and skill learning for achieving sustainable development.

### **Statement of the Problem**

The adoption and utilization of ICT innovations in teaching and skill learning in vocational education indicate a positive correlation with development of more digital skills as required in ICT driven vocations. Despite the tremendous role of ICT in education, usage of traditional means of instructional delivery still exists in many tertiary institutions. The vocational educators and students seem to avoid the ICT opportunity to teaching and learning. Mbah and Umurhurhu (2016) pointed that integration of ICT in tertiary institutions have not yielded the desired result as they found that lecturers virtually do not utilize them in teaching. In vocational education teaching, it is pertinent to employ the right ICT tools as ICT

innovations provides different kind of content that serve different purposes in classroom. For instance, modeling software promotes the understanding of science and technological terms and illustrations, word processing, email and social media encourage communication skills while database and spreadsheet program promote organization skills.

The researchers wonder if the adoption of ICT innovation by vocational educators has impacted on the teaching and learning as the products of the educational system fall short of societal expectation. Research findings by Umar (2017) indicated that graduates do not have basic ICT or digital skills to manipulate computer-based machines used in production and communication activities in organization. Does it mean that the ICT tools are not relevant in vocational skill training or lack of utilization? Identifying the influence would help to promote provision, utilization and retraining of vocational educators on the best tool for their instructional delivery. Based on the above, the study investigated the influence of ICT innovation in vocational education teaching and skill learning for achieving sustainable development.

### **Purpose of the Study**

The main purpose of the study was to determine the influence of ICT innovations in vocational education for achieving sustainable development in Anambra State. The study specifically sought to determine the;

1. influence of ICT innovations in vocational education teaching for achieving sustainable development in Anambra State
2. influence of ICT innovations in vocational education skill learning for achieving sustainable development in Anambra State.

### **Research Questions**

The study was guided by the following research questions:

1. What are the influence of ICT innovations in vocational education teaching for achieving sustainable development in Anambra State?
2. What are influence of ICT innovations in vocational education skill learning for achieving sustainable development in Anambra State?

### **Hypotheses**

The following null hypotheses were tested at 0.05 level of significance:

H<sub>01</sub> There is no significant difference on the mean ratings of experienced and less experienced vocational educators on the influence of ICT innovations in vocational education teaching for achieving sustainable development in Anambra State.

H<sub>02</sub> Significant difference does not exist on the mean ratings of experienced and less experienced vocational educators on the influence of ICT innovations in vocational education skill learning for achieving sustainable development in Anambra State.

### **METHOD**

This study adopted a census survey research design. According to Alio (2008) and Nworgu (2015) survey research design is one in which a group of people or items are studied by collecting and analyzing data from only a few of them the entire group. This design was adopted due to the polychotomous instrument used and the wide distribution of the respondents. The area of the study was Anambra State of Nigeria. Anambra State is one of the five states in South-East geopolitical zone of Nigeria. The population comprised 281 teachers of vocational education in four tertiary institutions offering vocational education to students in Anambra State. The population was determined from field survey conducted by the researchers. The number was manageable and as such, there was no sampling.

The data collection was carried out using 21 item structured questionnaire developed by the researcher based on the review of related literature. The instrument was structured in four-point response scales. The instrument was validated by three experts from the Technology Education and Vocational Education and Measurement and Evaluation. Their corrections and suggestions were used to produce the final instrument used for the study. The instrument was trial tested using 20 copies on vocational educators in Enugu State who were not part of the population under study. The reliability coefficient yielded 0.76 using Crombach

Alpha method. This 0.88 coefficient is in-line with Uzoagulu (2013) that reliability index of 0.80 to 1 shows that the instrument is highly reliable.

Three research assistants were used in the administration of the questionnaire and out of 281 copies distributed 267 copies were returned giving 95.02% return rate. Weighted means and standard deviations were used to answer the research questions. Decisions on the research questions were made using the lower and upper limits of the mean based on a four-point scale. The standard deviation was used to determine the homogeneity or otherwise of the opinions of the respondents. The t-test statistics of no significance difference was used to test the null hypotheses. The significant value (at 2-tail) was compared with .05 level of significance at the appropriate degree of freedom. The null hypothesis was not rejected where the significant value was less than the .05 level of significance value at appropriate degree of freedom; otherwise the null hypothesis was rejected.

## RESULTS

The results of the study obtained were presented in Tables based on the research questions and hypotheses that guided the study (see table 1-4).

**Research Question 1:** *What are the influence of ICT innovations in vocational education teaching for achieving sustainable development in Anambra State?*

**Table 1: Mean ratings and standard deviation of the vocational educators on the influence of ICT innovations in vocational education teaching for achieving sustainable development in Anambra State**

S/N	influence of ICT innovations in vocational education teaching includes;	Experienced N= 185		Less Experienced N= 82		Overall		Decision
		$\bar{X}_1$	SD <sub>1</sub>	$\bar{X}_2$	SD <sub>2</sub>	$\bar{X}_G$	SD <sub>G</sub>	
1	ICT innovations are useful in teaching all topics	2.92	0.79	3.05	0.84	3.04	0.83	Agree
2	It makes teaching interesting and relatively concrete	3.00	0.74	2.98	0.82	2.98	0.81	Agree
3	It assists in the development of independent study habit during lesson presentation	2.93	0.79	2.98	0.82	2.97	0.81	Agree
4	It reduces the work load of instructional presentation	3.00	0.74	3.01	0.76	3.01	0.76	Agree
5	It facilitates teaching by updating of subject content with the teacher's knowledge	2.92	0.79	3.01	0.75	3.00	0.75	Agree
6	It provides a suitable platform for different capabilities of the students	3.00	0.74	3.03	0.72	3.03	0.72	Agree
7	It reduces the challenges of instruction materials provision as ICT provide such experiences	3.17	0.72	3.01	0.76	3.03	0.76	Agree
8	Assist teachers in chatting with students for follow-up	3.00	0.74	3.00	0.74	3.00	0.74	Agree
9	It provides better avenue for drawing charts, graphs, drawings and pictures	3.00	0.85	2.98	0.82	2.98	0.82	Agree
10	It helps in obtaining feedback from students after teaching	3.00	0.74	2.95	0.75	2.96	0.75	Agree
11	It helps to record and present learning outcome after assessing progress.	2.92	0.79	2.97	0.82	2.97	0.81	Agree
<b>Cluster Mean/SD</b>		<b>2.99</b>	<b>0.76</b>	<b>3.00</b>	<b>0.78</b>	<b>3.00</b>	<b>0.78</b>	<b>Agree</b>

**Note: X =Mean; SD = Standard Deviation; N = Number of respondents**

The analysis of data presented in Table 1 above shows that the overall mean rating of the respondents on the 11 items ranging 2.96 and 3.03 respectively indicating agree. This means that the identified are the influence of ICT innovations in vocational education teaching for achieving sustainable development in Anambra State. The items have overall cluster mean of 3.00 and standard deviation of 0.78. The low level of standard deviation of 0.78 shows obtained indicates that the respondents have consensus opinion in

their responses to the items on influence of ICT innovations in vocational education teaching for achieving sustainable development in Anambra State.

**Hypothesis 1**

There is no significant difference on the mean ratings of experienced and less experienced vocational educators on the influence of ICT innovations in vocational education teaching for achieving sustainable development in Anambra State.

**Table 2: Summary of t-test analysis of mean ratings of experienced and less experienced vocational educators on the influence of ICT innovations in vocational education teaching for achieving sustainable development in Anambra State**

Variables	N	t	df	Sig. (2tailed)	Mean Difference	Std. Error Difference	Decision
Experienced	185	.461	265	.586	.12879	.62571	NS
Less Experienced	85						

The result of t-test analysis in Table 2 shows that the t-value at 0.05 level of significance and 265 degree of freedom for the 11 items is 0.461 with a significant value of 0.586. Since the significant value of 0.59 is more than the 0.05 level of significance the null hypothesis is not significant. This means that there is no significant difference on the mean ratings of experienced and less experienced vocational educators on the influence of ICT innovations in vocational education teaching for achieving sustainable development in Anambra State.

**Research Question 2:** *What are influence of ICT innovations in vocational education skill learning for achieving sustainable development in Anambra State?*

**Table 3:**

**Mean ratings and standard deviation of the vocational educators on the influence of ICT innovations in vocational education skill learning for achieving sustainable development in Anambra State**

S/N	in-service training needs of technical teachers in innovative teaching approaches includes;	Experience d N= 185		Less Experienced N= 82		Overall		Decision
		$\bar{X}_1$	SD <sub>1</sub>	$\bar{X}_2$	SD <sub>2</sub>	$\bar{X}_G$	SD <sub>G</sub>	
12	ICT innovation promote thorough understanding of task in a skill	2.83	1.03	2.97	0.80	2.96	0.82	Agree
13	It motivate learners to find solution to skill problem	2.92	0.90	2.90	0.75	2.90	0.76	Agree
14	Provides information on how a problem can be solved	2.83	0.72	2.90	0.76	2.89	0.76	Agree
15	It provides individualized tools for assessing performance	3.00	0.85	2.91	0.75	2.92	0.75	Agree
16	It helps in sourcing and retrieving materials for independent learning of skill	2.92	0.67	2.96	0.78	2.95	0.77	Agree
17	It improve communication and learning outside the classroom	3.00	0.85	3.03	0.72	3.03	0.73	Agree
18	It motivates learners acquisition of skills through video and other electronic guide	2.92	0.67	3.05	0.78	3.04	0.76	Agree
19	It helps students to link ideas and differentiate items from others	3.25	0.75	3.03	0.76	3.05	0.75	Agree
20	It provides insight in understanding oneself learning	2.92	0.67	3.03	0.78	3.02	0.76	Agree
21	It promote the overall development of digital awareness and skills	3.08	0.79	3.03	0.81	3.04	0.81	Agree
<b>Cluster Mean/SD</b>		<b>2.96</b>	<b>0.79</b>	<b>2.98</b>	<b>0.77</b>	<b>2.98</b>	<b>0.77</b>	<b>Agree</b>

**Note:** X =Mean; SD = Standard Deviation; N = Number of respondents;

The result of data analysis presented in Table 3 depicts that the overall mean rating of the respondents ranges from 2.89 to 3.05 indicating that the itemized are the influence of ICT innovations in vocational education skill learning for achieving sustainable development in Anambra State. The overall cluster mean of 2.98 further shows that the respondents agree to the 10 items. The low cluster standard deviation of 0.77 obtained from data analysis indicates that the opinion of the respondents does not differ remarkably.

**Hypothesis 2**

Significant difference does not exist on the mean ratings of experienced and less experienced vocational educators on the influence of ICT innovations in vocational education skill learning for achieving sustainable development in Anambra State.

**Table 4:**

**Summary of t-test analysis of mean ratings of experienced and less experienced vocational educators on the influence of ICT innovations in vocational education skill learning for achieving sustainable development in Anambra State**

Variables	N	t	df	Sig. (2tailed)	Mean Difference	Std. Error Difference	Decision
Experienced	185	0.296	265	0.391	0.61704	0.43390	NS
Less Experienced	82						

The result of t-test analysis in Table 4 shows that the t-value at 0.05 level of significance and 265 degree of freedom for 10 items is 0.296 with a significant value of 0.391. Since the significant value of 0.391 is more than the 0.05 level of significance, the null hypothesis is not significant. This means that there is no significant difference with respect to the items on the mean ratings of experienced and less experienced vocational educators on the influence of ICT innovations in vocational education skill learning for achieving sustainable development in Anambra State.

**DISCUSSION OF FINDINGS**

The result of data analysis according to research question one indicated that ICT innovations influence the teaching of vocational education. The findings indicated the following; ICT innovations are useful in teaching all topics, makes teaching interesting and relatively concrete, assist in the development of independent study habit during lesson presentation, reduces the work load of instructional presentation, facilitate teaching by updating of subject content with the teachers knowledge, provides a suitable platform for different capabilities of the students, reduces the challenges of instruction materials provision as ICT provide such experiences, assist teachers in chatting with students for follow-up, helps in obtaining feedback from students after teaching among others. The implication of the findings of the study was ICT innovation influence teaching of vocation education programmes and showed be promoted among the practitioners for achieving sustainable development. The findings of the study were in line with Umar (2017) that ICT promotes teaching as through ICT images can easily be used in teaching and improving the retentive memory of the students. The author further noted that ICT assist teachers to create interactive classes and make the lesson more enjoyable, which could improve students’ attendance and concentration. Victoria (2015) indicated that ICT facilities have positive influence on education as the institutions are working on sustainable education for global competitiveness. This therefore supports the findings that ICT innovations influence vocational education teaching for achieving sustainable development in Anambra State.

Further, the findings of the study in hypothesis one showed that there was no significant difference on the mean ratings of experienced and less experienced vocational educators on the influence of ICT innovations in vocational education teaching for sustainable development in Anambra State. The implication of no significant difference was that experience of vocational educators had no effect on the

identified influence of ICT innovations in vocational education teaching for sustainable development in Anambra State.

Furthermore, the findings of the study in research question two revealed that ICT innovations influence vocational education skill learning for achieving sustainable development. Among the identified influences were that ICT innovation promote thorough understanding of task in a skill, motivate learners to find solution to skill problem, Provides information on how a problem can be solved, provides individualized tools for assessing performance, provides individualized tools for assessing performance, helps in sourcing and retrieving materials for independent learning of skill, improve communication and learning outside the classroom, helps students to link ideas and differentiate items from others, provides insight in understanding oneself learning and promote the overall development of digital awareness and skills. The findings of the study showed that the itemized are the influence of ICT innovations in vocational education skill learning for achieving sustainable development in Anambra State. The findings of the study were in line with Eze and Ogbueghu (2017) that integration of ICT in learning helps in meeting the needs of the learners. It is evidence that ICT provides the learners with interactive learning platform that encourages independent learning, self-study and digital skill acquisition. The indication of the findings was that ICT have relevance in skill learning of vocational education programme.

Moreover, the findings in hypothesis two showed that significant difference does not exist on the mean ratings of experienced and less experienced vocational educators on the influence of ICT innovations in vocational education skill learning for achieving sustainable development in Anambra State. This means that experience of the vocational educators had no impact on identified influence ICT innovations in vocational education skill learning for achieving sustainable development in Anambra State. The finding of significant difference was in agreement with Mbah and Elobuike (2016) that the experience does not influence the use of innovative of skills in service delivery. This showed that the ICT innovation influence vocational education skill learning for achieving sustainable development.

## CONCLUSION

ICT innovation plays a significant role in vocational education as it assist teachers in explaining complex instruction and ensures students comprehension. The study highlighted some of the ICT innovations and data were collected on their influence to teaching and learning of vocational education programmes. The influence identified in teaching and learning of vocational education includes teaching all concepts and topics in vocational education, development of independent study habits by both teachers and learners and reduces the inadequacies of instructional materials used in teaching vocational education course to the students. It is therefore supported by empirical data that ICT innovations influence the teaching and skill learning of vocational education programmes for achieving sustainable development.

## RECOMMENDATIONS

Based on the findings, the following recommendations were made:

1. Teachers of vocational education should be given in-service training on the ICT in teaching for sustainable development.
2. Relevant ICT innovations should be made available for the training of competent and digital skill-oriented graduates of vocational education.
3. Government should employ supporting staff for the management and use of ICT innovations in teaching and learning vocational education.

## REFERENCES

- Alio, A. N. (2008). *Fundamentals of Educational Research*. Enugu. Samireen Nigeria Ltd.
- European Union (2009). The use of ICT for teaching and learning technical vocational education and training. *Final Report of the EU Commission DG Education and Culture*



- Eze, D. M. & Ogbuegbu, S.N. (2017). Teacher's perception on the use of ICT for instructional delivery of economics in Egbo-Etiti Local Government Area of Enugu State. *Journal of Technical Vocational Education, Training and Research* 2(1) 57-70
- Mason, M. (2017). Environmental science sustainability. Retrieved on 18/2/2018 from <http://www.environmentalscience.org/sustainability>
- Mbah, C. O. (2016). Mechatronics technology craft training needs of technology college students in Anambra State. *Unpublished M. Sc. Dissertation* presented to the Department of Technology and Vocational Education. Enugu State University of Science and Technology, Enugu
- Mbah, C. O., Nnadi, K. J. Ohagwu, G. C. & Aduhuekwe, F. I. (2020). Repositioning skill acquisition in vocational education for global competitiveness in Anambra State. *International Journal of Innovative Social and Science Education Research* 8 (4), 26-34.
- Mbah, C.O. & Elobuikwe, H.U. (2016). Achieving quality assurance in informal automobile apprenticeship training system for sustainable self-employment of trainees in Enugu metropolis. *Journal of Research in Science and Technology Education JORSTED* 6(1),146-155.
- Mbah, C.O. & Umurhurhu, E. B. (2016). Improving the teaching learning of computer aided drafting and designing (CADD) for effective skill development in Nigerian tertiary institution. *International Technology Research Journal (INTERJ)* 4(1), 24-29.
- Miller, I.C. (2019). *Skill Acquisition and Training*. Oxford; Prince Publishers.
- Nworgu, B.G. (2015). *Educational Research; Basic issues and methodology*. Nsukka; University Trust Publishers.
- Odo, S. N. (2017). Accounting student's perception and experience in blended learning. *Journal of Technical Vocational Education, Training and Research* 2(1) 157-170.
- Okafor, C.E. (2017). ICT employability skills possessed by business education graduates for sustainable economic empowerment in North West zone of Nigeria. *Unpublished Ph.D Thesis*. Department of Technology and Vocational Education. Enugu state university of science and Technology Enugu.
- Okeke, E. C. (2019). Contemporary issues in basic education for human capacity development. *Journal of Research in Science and Humanities* 1(1) 371-378.
- Okorieocha, C. N., Okparaeke, G.M. & Ilojeme, E. E. (2017). Effects of information communication technology (ICT) on student's retention in basic electricity. *Journal of Technical Vocational Education, Training and Research* 2(1) 134-144
- Olaniyi, O. N. (2022). Digital skills and future of business education students. *International Journal of Multidisciplinary and Current Education Research* 4 (1) 186-192.
- Oluka, S. N., Odeluga, P. E. & Mbah, C. O. (2021). Extent of provision of ICT in-services training needs of teachers for effective curriculum delivery in secondary schools in Anambra State. *International Journal of Innovation Education Research* 9(4) 149-157.
- Onoh, B. C. E. C. (2011). *Fundamentals of entrepreneurship studies*. Enugu; Cheston Agency Press Ltd.
- Umar, G. D. (2017). The role of ICT infrastructure in tertiary education in Nigeria. Convocation *Lecture presented at the 46<sup>th</sup> convocation of the University of Nigeria Nsukka, January 26, 2017* 5-8.
- Uzoagulu, A.E. (2013). *Practical Guide to Writing Research Report in Tertiary Institutions*. Enugu; John Jacobs Classic Publishers Ltd.
- Victoria, L. T. (2015). ICT in education/the use of ICT in Education. Retrieved on 23/11/2019 from <https://en-wikibooks.org/wiki/ICT-in-Education>