



Enhancing best Practice in Electronic Technology Skills Acquisition in Polytechnics for Sustainable Development in South West, Nigeria

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Abstract

The researchers are interested in enhancing best practice in electronic technology skill acquisition in Polytechnics for Sustainable development in South West, Nigeria. The study utilized a descriptive survey research design. Three objectives were determined for the three research questions to guide the study. The target population for the investigation consisted of three hundred (300) lecturers and instructors in the field of Electronics. These participants were purposively drawn from Polytechnics across six (6) states where Electronics-related courses are formally offered. There was no sampling in the investigation due to the limited population size. The instrument for data collection was a questionnaire titled Enhancing best practice on electronic skills acquisition for sustainable development in South West, Nigeria (EESASD). The questionnaire was validated by three specialists; using face and content validity. Test-retest technique was administered twice in two of the Kwara State Polytechnics at an interval of two weeks to establish reliability coefficients of the instrument. Thereafter, the Spearman rank correlation method was applied to obtain $r = 0.70$, indicating that the instrument remained suitable and dependable for the present investigation overall. Mean and Standard Deviation were employed to analyze the dataset from the three (3) research questions at a decision threshold point of 3.00 and above 0.50 as Agreed and 3.00 below 0.50 as Not Agreed. The findings of the study show all the items were all innovative strategies for enhancing the electronic skills acquisition among the Polytechnics' students for sustainable development among others. The study concluded that enhancing of electronic skill acquisition in Polytechnic could be achieved if and only all items of the questionnaire could be strictly adhered and given attention to for sustainable development of students, communities, state, South West, Nigeria. The recommendations were made among which were competent personnel should be employed from time to time in order to enhance electronic skill for the students, training and retraining should be made available for those already employed personnel so as to improve the performances of students on practical innovation.

Keywords: Electronic, Skills Acquisition, Sustainable Development and Polytechnics

1. Introduction

Polytechnics in Nigeria constitute tertiary educational institutions entrusted with the responsibility of training Higher and middle level manpower for industrial and technological development. As post-secondary institutions, they are established to develop competent human resources in disciplines such as Science, Engineering, Technology, Commerce, and Management with the objective of promoting self-sufficiency, entrepreneurship to gain employment (FRN, 2014). The aims and institutional objectives of Polytechnics are operationalized through a two-tier academic structure, namely the National Diploma (ND) and the Higher National Diploma (HND)

programmes. The National Diploma is structured as a two-year academic programme complemented by a compulsory one-year Students Industrial Work Experience Scheme (SIWES). Participation in SIWES serves as a mandatory requirement for progression and eligibility into the Higher National Diploma programme.

In addition to instructional delivery, Polytechnic institutions are mandated to engage in applied research, facilitate skills acquisition and technological innovation, and contribute meaningfully to community development initiatives (NBTE, 2016). In Nigeria, Polytechnics offer Electronics among other programme courses at National and Higher Diploma level to enable students have in-depth knowledge of both practical and theory for self-reliance and as well be employer of labour. In view of these various courses flouted with respect to the programme of electronic are also offered to prepare the students towards the modern skill acquisition need to be acquired in a polytechnic setting to enable the electronics industry to flourish.

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Electronics is one of the academic programmes offered at both the National Diploma (ND) and Higher National Diploma (HND) levels in Polytechnics with the strategic objective of producing middle- and higher-level technical manpower for the Electronics industry.

The training and continuous retraining of students/trainees emphasize competency-based skills acquisition and applied research in alignment with the National Board for Technical Education (NBTE, 2016) Minimum Academic Standards. For example, as articulated in the objectives of the Higher National Diploma programme in Electronics, graduates are expected to demonstrate specific practical and professional competencies. These include the ability to design and construct simple electronic circuits as components of major projects; erect, assemble, and install basic electronic equipment; perform routine maintenance operations and execute minor repairs on electronic installations and devices; select and appropriately utilize testing instruments to conduct fundamental measurements and diagnostic evaluations under varying operational conditions; operate relevant electronic systems and installations effectively; and prepare simple bills of quantities and technical specifications relevant to electronic engineering practices within industrial settings (NBTE, 2016).

Electronics technology programme is a branch of technology that deals with lighting such as the use of electric current, gas lamps among others. The flow of electron in a conductor flows and facilitates in communication technique such as use of telephone, telex, television, radio message and satellite. Electronics is the pivot of technological growth and development. Most technological changes depend on electricity and electronic inclination and innovation (Ogbuanya, et.al, 2019). Appliances cannot operate without electricity that brings about the technological development as witnessed today. These appliances include various domestic and industrial machines, computers, audio and visual gadgets among others. Its importance notwithstanding, electricity involves a lot of hazards. Ogbuanya et.al, (2019) described electricity, “as a good servant but a bad master”. Though, the persisted of impacting the right attitude and knowledge to work, skill is being acquired through constant repetitions and involvement in participations in all sphere of workshops, seminar, conferences and industrial training programmes.

Skill acquisition constitutes one of the most reliable mechanisms through which young ones can gain access to the world of work in both the government and private sectors. Skill, as conceptualized by Iloka (2018), refers to manual proficiency developed through repeated performance of a specific operation, implying competence and mastery. Idigie et al. (2017) asserted that the acquisition of relevant skills enhances the productive capacity of a nation; therefore, Nigerian society must acknowledge that every citizen should be

adequately equipped to contribute meaningfully to national development. Skill acquisition differs in scope and complexity depending on the occupational field concerned. Skills are commonly categorized into cognitive, affective, and psychomotor domains. Individuals who pursue vocational and technical education are expected to demonstrate attributes such as interest, aptitude, capability, perseverance, appropriate personality traits, and requisite physical endowments that predispose them to success. Amadi et al. (2022) defined skill acquisition as the process of training an individual to perform a specific task proficiently in order to attain expertise. Skill denotes specialized competence with economic relevance or the potential to generate income and employment (Ayoola & Busari, 2017). Skills development, according to the National Council on Skills Development (NCSd, 2017), encompasses structured educational and training interventions aimed at enabling learners to acquire knowledge, competencies, and attitudes necessary for enhanced job performance and improved future career prospects, often involving a systematic cycle that begins with problem identification related to occupational performance. Given that the acquisition of appropriate skills is fundamental for individual contribution to societal advancement, continuous updating of knowledge and attitudes through regular training is imperative to prevent obsolescence in a dynamic socio-economic environment.

According to Uzoagulu (2011), many countries are described today as developed due to their technological feats and maneuvers. Puyate (2011) posited that the scope and depth of knowledge and competencies transmitted to the students should meet the demand of industries and work place and that, the academic environment in Polytechnic institutions ought to be replica of what is found in industries. This can be attained and enhanced among others only if the lecturers and workshop instructors are qualified, workshops/laboratories fully equipped because no meaningful learning can occur in a void of all these resources and facilities. Even though, there is the need for enhancing the best practice in Electronic Technology for Sustainable Development in South West, Nigeria Polytechnics.

Development is conceptualized as a multidimensional process that engenders growth, advancement, progressive transformation, and the integration of physical, economic, environmental, social, and demographic variables. According to MDG Monitor (2016), development is a broadly utilized concept denoting a defined stage of advancement or expansion. The term may also describe innovative and improved ideas, products, or events that signify a transition to a new condition within evolving contexts. Ntegwung and Njoku (2022) argued that development may assume a sustainable dimension. However, sustainable development remains a dynamic construct whose definition continues to evolve through ongoing

revisions, extensions, and conceptual refinements. Lawal (2014) maintained that the consistent element within the discourse is that sustainable development encompasses the interrelationship among three fundamental pillars: social equity, economic viability, and environmental protection. According to the United Nations World Commission on Environment and Development (WCED), development is only sustainable if it meets current demands without jeopardizing the ability of future generations to meet their own. Sustainable development may therefore be interpreted as the equitable distribution of opportunities for well-being, requiring careful attention to strategic objectives which, if neglected, may decelerate or undermine progress in other developmental domains.

Development that satisfies current demands without jeopardizing the capacity of future generations to satisfy their own needs is known as sustainable development. It is impossible to overstate the significance of connecting skill development with sustainable development (Agommuoh & Ndirika, 2017). Other areas of sustainable development include: sustainable self-employment, sustainable economic development, sustainable manpower development, sustainable socio-economic development, and sustainable industrial development among others. However, sustainable development represents a development paradigm that promotes the prudent and efficient utilization of resources (Lokko et al. In pursuit of the enhancement, resource productivity, manufacturing sectors are required to optimize the entire supply chain by systematically evaluating raw material extraction processes, component fabrication, product design strategies, and the organization of reverse logistics and recovery markets. Sustainable development seeks to reduce environmental impact while simultaneously sustaining economic expansion, fostering social progress, and enhancing overall quality of life. Kachollom (2018)

1.1 Statement of the Problem

Polytechnic curriculum designed are expected to bridge the gaps between theory and practices in the field of engineering and any other related educational courses and programmes which will eventually promotes the impactful skills acquisition as well as theoretical aspect of the courses' contents towards the training and retraining of middle and higher-level manpower required for the society needs according to the National Board for Technical Education (NBTE), (2016). In view of this, training and retraining of trainers/students should not be static in acquiring skills but need to be dynamic due to the change in technology in both human and materials resources which is expected to turn the tables and take the trends of global development for better performance and productivity through the best practice of using all available sophisticated equipment, machines, tools and techniques.

Though, training and retraining of the students through the traditional methods with outdated equipment, machines and tools seem not to be yielding best practice in electronic skills acquisition for sustainable development outcomes of poor performance and productivity are becoming worsen by the evident results of internal and external examination conducted of students on practical displaced to suit the needs of society. This is because of inadequate of current seasonal competent personnel, outdated equipment, machines and tools in the workshops and where these available, the challenge of epileptic supply of electricity could not allow the effective use operation, even though, the Students Industrial Work Experience Scheme (SIWES) introduced to cater for the short fall of school practical fails to bring a significant change among others result to the fall in standard of performance and productivity of skills acquired on electronic technology for sustainable development after a lot of training and retraining. It is at this junction, that there is need for the enhancement of best practice in electronic skills acquisition for sustainable development in West Polytechnics; Nigeria are called for the study.

1.2 Purpose of the Study

The main purpose of the study was to determine the best practice that would enhance on electronic skills acquisition for sustainable development in Polytechnic in South West, Nigeria. Specifically, the study:

1. Examine the trend of using modern methods for enhancing the best practice in Electronic Technology skill Acquisition through the current seasonal competent personnel for the students sustainable development in South West Polytechnic, Nigeria.
2. Compare the trend of modern with traditional method for Enhancing the best practice in electronic skill acquisition for the students sustainable development in South West Polytechnic, Nigeria
3. Access the effectiveness operation of machines, equipment and tools in the workshops for enhancing the best practice on electronic Technology skills acquisition for the students' sustainable development in South West Polytechnics, Nigeria

1.3 Research Questions

Three research questions were formulated for the study based on the highlighted purpose of the study thus:

1. What is the trend of using skill acquisition for enhancing the best practice in electronic technology through the competent personnel for Students sustainable development in Polytechnics in South West, Nigeria?
2. Are there any changes of using modern over traditional trends to enhance the best practice in electronic technology skill acquisition for Students sustainable' development in Polytechnic in South West, Nigeria?

3. How effective of using machines, equipment and tools in the workshops to enhance the best practice in electronic technology skills acquisition for students sustainable development in Polytechnic in South West, Nigeria?

2. Methodology

The investigation employed a descriptive survey research design. It was deemed suitable because the research items were structured to elicit the perceptions, opinions, and relevant information from respondents. The target population for the investigation consisted of three hundred (300) lecturers and instructors in the field of Electronics. These participants were purposively drawn from Polytechnics across six (6) states where Electronics-related courses are formally offered. There was no sampling in the investigation due to the limited population size.

Data were collected using a structured questionnaire titled "Enhancing Best Practices on Electronic Skills Acquisition for Sustainable Development in South West Polytechnics" (EESASD). The instrument adopted a five-point Likert rating scale of Strongly Agree = 5, Agree = 4, Disagree = 3, Strongly Disagree = 2, and Undecided = 1. The questionnaire underwent validation by three subject-matter experts in Electronics Technology Education—two from Electronics and one from Measurement and Evaluation all affiliated with the University of Ibadan, Oyo State, employing both face and content validity procedures.

Reliability of the instrument was established through the test-retest method conducted twice in two Kwara State Polytechnics at a two-week interval. Spearman's Rank Order Correlation was applied to compute the reliability coefficient, yielding $r = 0.70$, which indicated that the instrument possessed acceptable reliability for the study. Data generated from the three (3) research questions were analyzed using Mean and Standard Deviation, with a decision benchmark of 3.00 and a standard deviation threshold of 0.50 and above interpreted as Agree, while mean values of 3.00 with standard deviation below 0.50 were categorized as Not Agree having used SPSS Version 23 for the data analysis.

3. Results

Research Question 1: What is the trend of using skill acquisition for enhancing the best practice in electronic technology through the competent personnel for Students sustainable development in Polytechnics in South West, Nigeria?

Table 1 result showed that the mean response and standard deviation of the lecturers are ranging from 3.00 to 3.50 and .75 to 1.40 while the workshop instructors fell between 3.10 to 3.40 and .63 to .53 respectively with overall mean and standard deviation respondents fell between 3.11 to 3.74 .54 to .82 indicating that all items of the questionnaire were agreed upon by the both lecturers and workshop instructors as all the statistical data of responses fell

between and above at a decision cutoff point of 3.00 and above 0.50 as Agreed.

Research Question 2: Are there any changes of using modern over traditional trends to enhance the best practice in electronic technology skill acquisition for Students sustainable development in Polytechnic in South West, Nigeria?

Table 2 results indicated the overall mean responses of the 15 items is 3.13 and above, revealing that the respondents agreed to a great extent with all the items as the best practice on electronic technology skill acquisition through modern over traditional method for sustaining Polytechnics students' development in South West, Nigeria.

The standard deviation also ranged from .54 to 1.20 indicates homogeneity of opinions. This is confirmed by the low overall standard deviation of .67. The grand mean for lecturers are 3.05 and that of workshop instructors are 3.21. This affirmed the agree' option as indicated by the respondents to the best practice on electronic technology using modern over traditional skill acquisition for sustaining Polytechnic students' development in South West, Nigeria.

Research Question 3: Are there any changes of using modern over traditional trends to enhance the best practice in electronic technology skill acquisition for Students sustainable development in Polytechnic in South West, Nieria

Table 3 result revealed that the lecturers and workshop instructors response to all items of the questionnaire of mean value and standard deviation were ranging from 2.18 to 3.40 and .96 to 1.40 and 3.02 to 3.40 while the overall were 2.90 to 3.36 indicating to be in agreement as all were within and above the cut off mean and standard values.

4. Discussion of Findings

The finding in Table 1 indicated that all the items are the innovational strategies for enhancing the electronics skills acquisition among Polytechnics' students for sustainable development in South West, Nigeria. This finding correlated with Puyate, (2011), who acknowledged that knowledge and skills impacted to the students should meet the demand of industries and work place for effective production. The finding is in agreement with Agommuoh and Ndirika (2017) who stated that certain strategies were required for enhancing the students' skills acquisition of any field in technology education.

The results in Table 2 showed that the respondents agreed with all the items are the best practice for electronic to enhance skills acquisition in Polytechnics and alike for sustainable development in South West, Nigeria. The results supported the theory put forth by Iloka (2018) that skill is a manual dexterity developed via repeated execution of a task. The study showed that

Table 1: Mean and standard deviation response of Lecturers' and Workshop Instructors on the trend use of skills Acquisition for enhancing best practices in Electronics technology for students Sustainable Development in Polytechnics in South West, Nigeria (Field Survey, 2024).

S/N	Items	Lecturers' (N = 150)			Workshop Instructors (N=150)			(Overall (N=300)		
		X	SD	Dec	X	SD	Dec	X	SD	Dec
1.	Observe all necessary safety precautions when operating in the field	3.02	1.02	A	3.20	.60	A	3.11	.71	A
2	Work with materials both manual and powered efforts	3.30	1.01	A	3.30	.56	A	3.74	.74	A
3	Use required consumable materials for work	3.20	1.10	A	3.10	.53	A	3.15	.70	A
4	Perform scientific experiment relevant to getting work completed	3.00	1.18	A	3.30	.56	A	2.90	.82	A
5	Develop high sense of responsibility to enhance skill	3.02	.82	A	3.40	.59	A	3.29	.66	A
6	Initiate innovations to improve skills in elect/elect tech.	3.02	1.40	A	3.10	.60	A	3.06	.67	A
7	Maintain high sense of sincerity in the field	3.01	.76	A	3.20	.54	A	3.11	.58	A
8	Ability of teachers to create module of course for elect/elect students	3.40	1.05	A	3.10	.63	A	3.25	.68	A
9	Students should possess qualities such as interest, patience, aptitude and ability in the field area.	3.36	.75	A	3.10	.53	A	3.23	.54	A
10	Provide maintenance services of tools used in duty places	3.14	1.05	A	3.33	.59	A	3.24	.77	A

Table 2: Mean and standard deviation of using modern over traditional trend for enhancing best practice in Electronic Technology skills acquisition for students sustainable development in Polytechnic in South West, Nigeria (Field Survey, 2024)

S/N	Items	Lecturers (N = 150)			Workshop Instructors (N = 150)			Overall (N=300)		
		X	SD	Dec	X	SD	Dec	X	SD	Dec
1.	Ability to identify key elements appliances	3.20	1.02	A	3.23	.54	A	3.22	.53	A
2	Ability to select tools for repairs	3.20	.97	A	3.04	.51	A	3.12	.64	A
3	Demonstrate conduit on board	3.10	1.15	A	3.26	.59	A	3.18	.77	A
4	Install MICC cable	3.00	1.07	A	3.20	.64	A	3.04	.78	A
5	Identify different wiring types	3.40	1.01	A	3.22	.54	A	3.31	.71	A
6	Identify incandescent lamp, tungsten filament lamp, filament lamp.	3.00	.00	A	3.00	.50	A	3.00	.00	A
7	Explain duct wiring	3.50	.90	SA	3.22	.54	A	3.36	.65	A
8	Differentiate AC from DC machine	3.00	1.02	A	3.22	.64	A	3.07	.71	A
9	Differentiate AC and DC motors from generator	3.00	1.20	A	3.10	.64	A	2.83	.8	A
10	Ability to solder faulty resistor, inductor, capacitor	3.02	1.04	A	3.02	.54	A	3.02	.72	A
11	Ability to replace ICS	3.00	1.06	A	3.46	.59	A	3.23	.78	A
12	Identify neon tube, hot and cold cathode	3.00	1.01	A	3.18	.57	A	3.00	.69	A
13	Fixing faults in VGA assembly	3.40	.96	A	3.32	.58	A	3.36	.72	A
14	Removal and replacement of drives	3.20	.97	A	3.41	.58	A	3.31	.73	A
15	Fixing faults in AC power supply terminal/circuit	3.00	1.20	A	3.33	.59	A	2.95	.85	A
	Cluster Mean/SD	3.05	.97	A	3.21	.57	A	3.13	.67	A

Table 3: Mean and standard deviation to the effective operational of using outdated machines, equipment and tools in the Workshops in enhancing best Practice on Electronic Technology skills acquisition for sustainable development in South West, Nigeria (Field Survey, 2024).

S/N	Items	Lecturers' (N = 150)			Workshop Instructors (N =150)			Overall (N=300)		
		X	SD	Dec	X	SD	Dec	X	SD	Dec
1	Machines adopted for the training of electronic in the workshops enhanced effective skill acquisitions	3.02	1.04	A	3.02	.50	A	3.20	.72	A
2	Machines employed for the retraining of electronic enhanced effective skill acquisition in the workshops	2.18	1.01	A	3.18	.59	A	3.23	.78	A
3	Machines employed for the production in electronic gadgets enhanced effective skill acquisition results	3.10	1.15	A	3.26	.59	A	3.18	.77	A
4	Machines used for the repairs of electronic gadgets enhanced effective skill acquisition in electronics' production	3.20	.97	A	3.14	.50	A	3.31	.73	A
5	Machines used for diagnosing the fault in electronic gadgets is enhanced effective in skill acquisition	3.40	1.05	A	3.10	.51	A	3.11	.58	A
6	Machines employed for the fastening the screwing in electronic gadgets enhanced effective in skill acquisition	3.30	1.01	A	3.20	.52	A	3.74	.74	A
7	Effective adopted of equipment in training of student on electronic in the workshops enhanced effective skill acquisition	2.50	1.18	A	3.30	.51	A	2.90	.82	A
8	Effective adopted of equipment in retraining of students on electronic in the workshops enhanced effective skill acquisition	3.02	1.40	A	3.10	.50	A	3.06	.67	A
9	Adopting equipment in diagnosing the fault in electronic enhanced effective students' skill acquisition	3.10	1.15	A	3.26	.51	A	3.18	.77	A
10	Employing equipment in repairs of electronic gadgets enhance effective students' skill acquisition	3.00	1.06	A	3.46	.50	A	3.23	.78	A
11	Effective utilization of tools in the workshops enhanced students' skill acquisition	3.40	.96	A	3.32	.51	A	3.36	.72	A
12	Effective utilization of tools in screwing the bolts in electronic gadgets enhanced skill acquisition	3.20	.97	A	3.41	.50	A	3.31	.73	A
13	Employing tools in losing the bolts in electronic gadgets enhanced effective skill acquisition	2.56	1.20	A	3.33	.52	A	2.95	.85	A

there was not much difference between the mean responses of lecturers and workshop instructors on the practical skills centred on strategies for enhancing skills acquisition on electronics on Polytechnics' students for sustainable development in South West Nigeria. This is in line with the findings of Idigie et al. (2017), who found that gaining the necessary skills is a way to boost a country's productive capacity.

machines, equipment and tools improve on the use of facilities readily available for enhancing the best practice on electronic skill acquisition in Polytechnics for sustainable development in South West, Nigeria. This is in line with research study of Puyate, (2011) which critically emphasized of the utility of the facilities in the institutional base workshops for better enhancing skills acquisitions in institutions of higher learning.

The results in Table 3 revealed that with the use of

5. Conclusion

Based on the above outcome of the research study it was clearly revealed that all the research items questionnaire were adequately and positively responded to by the respondents to provide that the enhancement of electronic skill acquisition in Polytechnic would be achieved if only all items of the questionnaire could be strictly adhered and as well given attention to by the lectures and workshop instructors in Polytechnic in South West, Nigeria for students sustainable development within the communities in South West and in nation at large especially this time around of dwindling economy recessions. The students which have been the centre of focuses would be self-reliance, employer of labour, promoting economic growth, improving social service, develop human and capital capacity.

6. Recommendations

In the light of the findings of the study, the following recommendations are made:

1. Lecturers and Workshops instructors should be retrained from time to time so as to keep abreast of innovation on the strategies for enhancing practical skills acquisition on the students.
2. Students should always be interested in the acquisition of skills for enhancing and sustainable industrial development through constant practicing in the workshops.
3. Modern machines Equipment and tools matching the industries standard should be provided by the government to all Polytechnic institutions for better enhancement of skills acquisition for sustainable development.
4. Provision of consumable materials should be readily available at all times for implementation of executing skills acquisition required as being stipulated by the National Board for Technical Education (NBTE)

References

- Agommuoh, P.C. & Ndirika, M. (2017). Strategies for promoting gender equality in STEM education towards sustainable development. In A.S. Ifamuyiwa (Ed.) *Science Teachers Association of Nigeria, 60th Anniversary Conference Proceedings*. Held between 7th and 10th, December in), Port Harcourt PP 298-303.
- Amadi, I. A., Igweagbara, S. N. & Chukwuladi, H. N. (2022). Skill acquisition on automatic water level control switch in electrical installation work students in technical education Universities in Rivers State. Book of Proceedings for 6th Annual Conference of the Faculty of Vocational & Technical Education, Ignatius Ajuru University of Education, Rumuolumeni, Port Harcourt, Rivers State, Vol1, 1-10, 2(1), 34-40. 40, 5-10.
- Ayoola, A. A. & Busari, R. S. (2017). Towards Effective Skill Acquisition and Skill Development in Vocational and Technical Education. *Journal of Professional Teacher Trainers (JOPTET)*, 8 (1&2). 204-216.
- Federal Republic of Nigeria (FRN) (2014) *National Policy on Education*, Nigeria Educational, Research and Development Council (NERDC) Press. Nigeria Yaba Lagos.
- Idigie, K.J.S., Nja, C.O. & Ugwu, A.N. (2017). Integrating resource-person for acquisition of entrepreneurial skills among chemistry students in Calabar education zone, Cross Rivers State, Nigeria. In A.S. Ifamuyiwa (Ed.),
- Iloka, A.M.C. (2018). Introduction to entrepreneurship education in Nigeria. In J.O. Ogbuagu and A.T. Nwamaradi, (Eds.), *Skill Development in Science/Technology Education for MDGs* (PP 210-221).
- Kachollom, B. L. (2018). Collaborative food security: An antidote for sustainable peace in Nigeria. *African Journal of Educational Archives*, 8(1), 39-49.
- Lawal, A. W. (2014). Technical and vocational education: A tool for national development in Nigeria. *International Journal of Social and Humanistic Science*, 14(1), 53-59.
- Lokko, Y., Heijde, M., Schebesta, K., Scholtes, P. & Van, M. (2018). Biotechnology and the bioeconomy towards inclusive and sustainable industrial development. *New Biotechnology*.
- MDG Monitor (2016). What is development?- A definitive guide. www.mdgmonitor.org/whatis-development.
- National Board for Technical Education (NBTE) (2016). *Higher National Diploma and National Diploma in Electrical and Electronics Technology Curriculum and Course Specifications* Kaduna. Nigeria.
- National Council on Skills Development (NCSD), (2017). E-Skill Development, Adviser to the Prime Minister. National Council on Skill Development 9th Floor, NOCC II. New Delhi 110001.
- Farlex, A (2014). The free dictionary. Com.
- Ntegwung, G. J. & Njoku, N. A. (2022). Repackaging technical vocational education and training (TVET) for sustainable national development. *African Journal of Educational Archives*, 8(1), 136-146.
- Ogbuanya, T.C., Abdullahi, S. & Ado, Y.K. (2019). Electrical installation competencies required by electrical/electronic teachers in Northern Nigerian Technical Colleges. *Nigerian Vocational Association Journal (NVAJ)*, 17 (2), 255 – 269. STAN Place Ltd.
- Puyate, S. T. (2011). Technology and major innovations in Nigeria. *International Technology Research Journal (INTERJ)*, 2(1). 1-5
- Uzoagulu, A.E. (2011). *Practical guide to writing research project reports in tertiary institutions*. Enugu: Cheston Ltd.