



IJEAST

INTERNATIONAL JOURNAL
OF ENGINEERING APPLIED SCIENCE
AND TECHNOLOGY



VOLUME : 5 ISSUE : 3 Print / Issue Publication Date: 15-Sep-2020



ISSN : 2455-2143



DOI : 10.33564/IJEAST.2020.v05i03.022

Indexed In



WWW.IJEAST.COM

editor@ijeast.com



ASSESSMENT OF THE EMPLOYABILITY SKILLS OF POLYTECHNIC ELECTRICAL/ELECTRONIC ENGINEERING GRADUATES FOR EMPLOYMENT IN OIL/GAS INDUSTRY IN NIGER-DELTA, NIGERIA

OWO, Offia Tugwell

Department of Vocational and Technology Education,
Rivers State University, Port Harcourt, Nigeria

ISAAC, Udoaka C. N.

Department of Electrical/Electronics,
Federal College of Education (Technical),
Omoku, Rivers State, Nigeria

Abstract: Graduates of electrical/electronic engineering from polytechnics in Nigeria of recent find it difficult to access job placements in oil/gas and allied industries. This issue of inability of technical graduates to secure paid employment or becoming self-employed has become of great concern to the graduates themselves, lecturers, parents and employers of labour. To some experts, the menace is due to graduates' poor skills acquisition. Others argued that the unemployment saga is due to Government's inability to create jobs for the teeming youths of Nigeria. Hence, this study focuses on assessment of the employability skills required of polytechnic electrical/electronic engineering graduates for employment in oil/gas industry in Niger Delta, Nigeria. The study was conducted using descriptive survey design. A population of 46 electrical/electronic lecturers in polytechnics and 24 electrical supervisors from oil and gas industries in Niger-Delta region of Nigeria was used for the study. No sampling was done since the population is of manageable size. Three research questions guided the study. The instrument for data collection was a 50-item structured questionnaire designed on Likert's 5-point scale. The instrument was face validated by two experts in electrical/electronic engineering from Federal polytechnic, Nekede, Imo State, Nigeria and an expert in measurement and evaluation from Rivers State University, Port

Harcourt. Cronbach's Alpha method was used to determine the reliability of the instrument which yielded a coefficient of 0.87. Out of 70 copies of the questionnaire distributed to the respondents, only 66 (42 lecturers and 24 supervisors) representing 94.3% of the total number was retrieved and used for data analysis. The research questions were analyzed using mean and standard deviation. The findings of the study revealed that electrical/electronic engineering students require electrical design and drafting skills, electrical machine operating skills, general safety skills, among other technical skills for employment in oil and gas industry. Similarly, the findings revealed further that students of electrical/electronic engineering also need to acquire generic soft skills to secure and maintain job positions in oil and gas industry. Finally, the study showed some ways of facilitating graduates' skills acquisition for employment in oil/gas industries which include further education, developing problem solving skills, collaboration, networking among others. One major criterion to finding job positions in any industry around the world is skill and competence. It is therefore very essential for polytechnic graduates of electrical and electronics engineering to develop these employability skills to ensure easy employment in the oil and gas industry in Nigeria.



Keywords: Employability Skills, Electrical/Electronic Graduates, Polytechnics, Oil/Gas Industry, Employment

I. INTRODUCTION

Oil and gas industry presently serves as the mainstay of Nigeria's economy. The oil/gas industry commenced operation in Nigeria in 1956 in Oloibiri in Bayelsa State, in the Niger Delta region of Nigeria. The Niger Delta region which play host to these multinational companies, is characterized by many environmental, economic and socio-political issues emanating from oil/gas exploration and production operations in the region. These problems on the environmental aspect include deforestation, oil spillage, air and water pollution from gas flaring, global warming, among others. Furthermore, on the economic scene, the challenges include poverty and unemployment among others whereas, socio-political issues include increase in crime rates such as cultism, kidnapping, armed robbery, smoking, rape, prostitution, human trafficking among others. These issues bring about untold hardship and stress on the people of the region. The problem of unemployment in Niger Delta region of Nigeria is partly due to inadequate skills acquisition by the people of the area for job opportunities in oil/gas industries. Adequate skills acquisition is crucial for job placement in oil and gas and other allied industries in Nigeria. The aims of the Electrical Technology Education (ETE) programme are to equip students with requisite knowledge and skills in electrical and electronic technology through the integration of theoretical and practical courses. The main reason why TVET graduates in Nigeria lack employability skills was the fact that employability skills are not incorporated in the curriculum of Nigerian tertiary institutions. The ETE is a double degree programme which combines the element of electrical technology and educational principles. In Nigeria, the programme is taught at college of education (technical) and universities of education and universities of technology. One major skilled area which is greatly needed for employment in oil/gas industry is electrical/electronic engineering technology due to its broad applications.

According to [11] electrical/electronic engineering technology is one of the accredited courses of instruction aimed at developing local semi-skilled technicians and technologists in Universities, Monotechnics, Colleges of technology, and Polytechnics. Polytechnic electrical/electronic engineering students study different technical courses in instrumentation, control system, telecommunications, data and information processing,

digital signal processing, electrical machines, analogue electronics, digital electronics, power system engineering among others. These courses are offered both in theories and practice to enable students develop requisite skills for employment in the world of work upon graduation. The Nigerian polytechnic education system therefore placed premium on practical skills acquisition by students for the technological advancement of the nation. This is seen from the NBTE curriculum which stipulates that 60% of total score in any technical courses should be awarded to practical works while the remaining 40% is for theoretical courses in polytechnics.

According to [16] a polytechnic is an educational system that equips an individual for employment or self-reliance by providing the learner with the necessary skills needed in the agricultural, industrial and commercial sectors leading to the economic advancement of a country. Polytechnic can be described as a non-university, institution of higher learning, saddled with the responsibility of offering different courses in technical subjects, technology, industrial production, agriculture, commerce and communication together with the provision of knowledge and skills associated with the handling of relevant tools and equipment, and to develop students through both theoretical and practical experience [15]. Polytechnic education as defined by [19] is a segment of the general education that prepares individuals for occupational fields and for effective participation in the world of work, lifelong learning for responsible citizenship preparation, sustainable development promotion, a best method of facilitating poverty alleviation and enable individual to develop technical and entrepreneurial skills and attitudes. Therefore, polytechnics are established to train and inculcate in learners (students) technical vocational and entrepreneurial skills necessary for self-reliance and productivity in the world of work. This implies that polytechnic electrical/electronic engineering students in addition to the acquisition of technical competence in their core areas of specialization, must acquire generic soft skills to enable them become employable in oil/gas industry. Therefore, to secure and sustain an employment in oil/gas, electrical/electronic students are expected to display adequate skills, knowledge and proficiency in their respective areas of specialization.

Skills as described by [18] are special abilities in a given occupation acquired through learning and practice. In the view of [11] skill refers to individual's capacity to control element of behavior, thinking and feeling within specified contexts and within a particular task domain. Skills therefore entail special



abilities gained through committed learning and practice which enable an individual to be proficient in his work role in a chosen occupational field. From the foregoing, it is well-established that for electrical/electronic engineering technology students in polytechnics to be proficient and skillful in their chosen areas of specialization, there is great need for them to develop their competence in technical, soft and generic skills for job offers in the oil/gas industry. These skills which are pertinent for effective career development in the oil/gas sector are regarded as employability skills.

However, in Nigeria, research had showed that technology graduates at entry level of employment are not equipped with relevant employability skills needed by industries which makes it difficult for them to assess good job in the industries. The common perception of the industries is that higher education institutions such as Federal Universities of Technology and polytechnics in Nigeria should equip their graduates with the employability skills for successful employment upon graduation. Thus, there is need for those universities and polytechnics to have paradigm shift in curriculum for each programme offered so as to providing the graduates with technical skills relevant for job placement. Universities and other tertiary institutions need to equip students with employability skills so that they can create jobs for themselves upon graduation if paid employment is not forth-coming.

According to [7] employability skills are set of skills, knowledge and attributes which enhances the chances of an individual to gain, maintain and excel in employment. Employability skills enable one to obtain new employment; move between roles within the same organization and to get promotion [6], [4], [9]. Employability skills as those skills necessary for getting, keeping and being successful in a job. These are the skills and attitudes that enable employees to get along with their colleagues, to make critical decisions, solve problems, develop respect and ultimately become strong ambassadors for the organization. These skills (soft) are usually lacking in graduates that are just out of school and even those already in employment. With no reservation, there is a lot of competition for jobs where and when available when the nation is faced with high rate of unemployment. To be found employable the individual must possess in addition to qualifications or specialist experience, capabilities or competencies such as aptitude (talent) attitude and behavior. The individual (employee) must be aware of what the employers are looking for in any employee. The person must be able to show that he is

employable, a team member and a contributing member of the organization. Organizations spend a lot of time and money training staff, not only in job - specific areas but also in general and basic skills. There are three categories of employability skills stated in the literature across the globe, namely core skills, generic skills and personal attributes [3], [20]. Generic skills refer to non-technical competencies involving little or no interactions with machines, equipment and tools within and across different occupations that help individual to obtain positive social relationships and contributes to the work environment [3]. Communication Skills (for Oral Communication), Technical Writing (for Written Communication to technical people only) and Library Usage (for Information). These can be summarized as Information and Communication Skills because the use of library is taught to inform student on how to use the library effectively while Communication Skills and Technical Writing for oral and written communications respectively. Employability skills required of electrical/electronic engineering technology students for job placements in oil/gas industry include technical skills in areas like radio and television maintenance and repair, troubleshooting of electronic circuits, phone repair, electrical installation, computer system maintenance, cloud computing, instrumentation, calibration of instruments, signal and information processing, automation, electrical system design, process control, digital electronics, machine assemblage among others; generic skills such as communication skills, interpersonal skills, problem solving skills, analytical skills, personal development skills, information and communication skills, report writing skills among others and soft skills such as innovativeness, creativity, ingenuity, conflict resolution, persuasiveness, honesty, cheerfulness, time management, among others. For employers, getting the right people means identifying people with right skills and qualities to fulfill the role and contribute to the organization success. The candidates may have the qualification and the 'hard skills' needed to be able to manage the job role but without having the relevant soft skills, employers are less prone to hire them. Therefore, it is imperative to assess whether or not, students of electrical/electronic engineering technology in Nigerian polytechnics acquire these relevant skills necessary for employment in oil/gas industries.

Assessment as defined by [17] is the systematic collection, review and use of information about educational programmes undertaken for the purpose of improving learning and development. Similarly, [14] sees assessment as a form of evaluation that uses



collected data for estimating the work quality or effectiveness of any programme or project. Therefore, assessment of the employability skills of electrical/electronic engineering technology graduates for employment in oil/gas industry in Niger Delta is aimed at ascertaining the efficiency and effectiveness of polytechnic Higher National Diploma (HND) electrical/electronic engineering technology programmes in polytechnics in Niger Delta, Nigeria. Since polytechnic education is targeted at the inculcation of the right knowledge, attitude and skills in the learners for the economic development and technological advancement of the nation, assessing programmes of polytechnics is crucial to ascertain its worth and effectiveness in the job of producing the right manpower for the nation's local industries for technological advancement of Nigeria.

The oil/gas industry is one whose operations demand the services of electrical/electronic technologists for numerous engineering and technological applications as required by their oil and gas exploration and production activities. Job opportunities in the oil/gas industry are often times given to expatriates from other countries irrespective of the fact that there are many trained electrical/electronic technologists from Nigerian polytechnics. Employers of labour in Nigeria often complain that some of the graduates of Nigerian universities, polytechnics, monotechnics and colleges of education lack the requisite, essential skills or competencies needed in the oil/gas industry or general labour market for sustainable employment. According to [13] the oil/gas industry generates so much revenue to the Nigerian Government thereby served as the main stay of the nation's economy yet was dominated by expatriates from developed countries. Most times, when these oil/gas employers are confronted to find out why job offers are given to foreigners, their reasons have always been that Nigerian graduates lacked employability skills to secure and sustain job placement in the oil/gas sector. Similarly, [1] submit that lack of adequate productive and marketable skills among graduate youths in Niger Delta is the main cause of unemployment in the region. The menace of inadequate in-country manpower development contributed to the over-involvement of foreigners in the Nigerian oil and gas industrial works resulting to unemployment and poverty in the nation [8]. Therefore, this study becomes necessary to ascertain whether polytechnic electrical/electronic graduates are well-positioned in knowledge, skills and attitude relevant to securing employment in oil/gas industry in Nigeria.

II. OBJECTIVES

The study seeks to ascertain the employability skills required of polytechnic electrical/electronic engineering technology graduates for employment in oil/gas industry in Niger-Delta, Nigeria. Specifically, the study sought to:

1. Determine the technical skills required of polytechnic electrical/electronic engineering technology graduates for employment in oil/gas industry in Niger-Delta, Nigeria.
2. Determine the generic soft skills required of polytechnic electrical/electronic engineering technology graduates for employment in oil/gas industry in Niger-Delta, Nigeria.
3. Determine ways of enhancing the employability prospects of polytechnic electrical/electronic engineering technology graduates in oil/gas industry in Niger-Delta, Nigeria.

Research Questions

1. What are the technical skills required of polytechnic electrical/electronic engineering technology graduates for employment in oil/gas industry in Niger-Delta, Nigeria?
2. What are the generic soft skills required of polytechnic electrical/electronic engineering technology graduates for employment in oil/gas industry in Niger-Delta, Nigeria?
3. What are the ways of enhancing the employability prospects of polytechnic electrical/electronic engineering technology graduates in oil/gas industry in Niger-Delta, Nigeria?

III. DATA AND METHODOLOGY

Descriptive survey design was used for this study whose population was 46 polytechnic electrical/electronic lecturers from Ken Saro-Wiwa Polytechnic Bori, Rivers State and Federal Polytechnic, Nekede, Imo State and 24 electrical supervisors from Green Energy International Limited and Amni International, two indigenous oil and gas companies operating in Andoni local government area of Rivers State, Niger Delta, Nigeria. No sampling was done since the population is of manageable size. The Niger-Delta region was chosen for the study because almost all the oil wells in Nigeria are located in the region and as such it serves as the hub of oil/gas operations in the country. Three research questions guided the study. The instrument for data collection was a 50-item structured questionnaire titled "Employability Skills of



Electrical/Electronic Technologists for Employment Questionnaire (ESEETEQ)” designed on Likert 5-point mean rating scale of strongly agree (SA), agree (A), undecided (UD), disagree (DA) and strongly disagree (SD) having numerical values of 5,4,3,2 and 1 respectively. The instrument was face validated by two experts in electrical/electronic engineering technology from Federal Polytechnic Ekowe, Bayelsa State and an expert in measurement and evaluation from Rivers State University, Port Harcourt, Rivers State. In determining the reliability of the instrument, 10 lecturers and 8 supervisors who were not part of the study population from Akwa Ibom State Polytechnic, Ikot Osurua were used and a reliability coefficient of 0.87 was obtained via Cronbach’s Alpha method after test-retest. Out of 70 copies of the questionnaire distributed to the respondents, only 66 (42 lecturers and 24 supervisors) yielding 94.3% of the total number of the instrument was retrieved from the respondents and used for data analysis. The research questions were analyzed using mean and standard deviation.

IV. STUDY AREA

The Niger-Delta region is composed of nine Nigerian states of Abia, Akwa Ibom, Bayelsa, Cross River, Delta, Edo, Imo, Ondo and Rivers. It has a population of about 30 million people [5]. The region is made up

of 185 local government areas having over 800 communities from 12 major ethnic groups including the Ijaws, Yorubas, Ibos, Ibibios, Itsekiris, Urhobos, among others. Niger Delta region is described as one of the most fragile ecosystem in the world serving as Africa’s largest delta and the third world largest mangrove forest [5]. It has one of the largest wetlands in the world, with about 2,370 km² consisting of rivers, islands, creeks, swampy terrain and estuaries with the stagnant swamps covering about 8,600 km² and the coastline spanning of over 450 km. The mangrove forest covers 54,000 km² of the region; while the landmass is over 70,006 km² [5]. Oil and gas operations in the Niger Delta demands the services of skilled personnel including electrical/electronic engineers and technologists needed to contribute meaningfully to the development of the industry and the nation’s economy.

V. RESULTS

The results are presented in tables according to research questions and hypotheses as follows:

Research Question 1: What are the technical skills required of polytechnic electrical/electronic engineering technology graduates for employment in oil/gas industry in Niger-Delta, Nigeria?

Table 1: Engineering Skills required of Electrical/Electronic Engineering Graduates for Employment in Oil/Gas Industry in Niger-Delta, Nigeria

S/N	Item	Lecturers			Supervisors		
		\bar{X}_1	SD ₁	Decision	\bar{X}_2	SD ₂	Decision
1	Electrical design and drafting skills	4.68	0.48	Agree	4.50	0.76	Agree
2	Electronic circuit trouble shooting skills.	3.94	0.85	Agree	4.19	0.85	Agree
3	Electrical circuit analysis skills.	4.09	0.90	Agree	3.95	0.86	Agree
4	Skills in using electronic devices and systems.	3.65	1.07	Agree	4.17	0.95	Agree
5	Electrical computation skills.	4.24	0.74	Agree	3.76	0.92	Agree
6	General workshop safety management skills.	4.35	0.65	Agree	4.19	0.97	Agree
7	Skills in Information and communication technology.	4.15	0.82	Agree	4.26	0.94	Agree
8	Electronic System Simulation skills.	3.97	0.94	Agree	4.11	1.04	Agree
9	Electrical machines installation skills.	4.29	0.84	Agree	4.06	0.81	Agree
10	Electronic devices installation skills.	3.79	1.09	Agree	3.78	1.12	Agree
11	Power electronics skills	3.89	0.98	Agree	4.02	0.79	Agree
12	Electrical measurement and instrumentation skills.	3.53	1.24	Agree	4.06	1.23	Agree
13	Skills in electronic system analysis.	3.68	1.14	Agree	3.96	1.05	Agree
14	Electrical/Electronic Instrument calibration skills.	3.65	0.98	Agree	3.82	1.22	Agree
15	Electric Coil Winding skills.	4.32	0.77	Agree	4.26	0.94	Agree
16	Power System Protection skills	3.94	0.89	Agree	3.84	1.05	Agree
17	Electrical Machines Servicing skills.	4.15	0.78	Agree	4.04	0.95	Agree



18	Skills in using electrical software (e.g MATLAB).	3.88	0.81	Agree	4.00	0.90	Agree
19	Electric Motor Speed Control skills.	4.21	0.91	Agree	4.40	0.95	Agree
20	Skills in Digital electronics and Information Security.	3.76	0.43	Agree	3.44	0.50	Agree
Grand Mean and SD		4.01	0.87		4.04	0.94	

Table 1 revealed that all the items are technical skills required of electrical/electronic engineering technology graduates for employment in oil/gas industry in Niger Delta, Nigeria. This is seen in the mean scores of all the items which are all greater than the criterion Mean of 3.00. Standard deviation values show homogeneity in the responses of the respondents.

Research Question 2: What are the generic soft skills required of polytechnic electrical/electronic engineering technology graduates for employment in oil/gas industry in Niger-Delta, Nigeria?

Table 2: Generic Soft Skills required of Electrical/Electronic Engineering Graduates for Employment in Oil/Gas Industry in Niger-Delta, Nigeria

S/N	Item	Lecturers			Supervisors		
		\bar{X}_1	SD ₁	Decision	\bar{X}_2	SD ₂	Decision
1	Communication skills.	4.00	0.91	Agree	3.70	1.02	Agree
2	Information and Communication Technology skills.	4.02	0.62	Agree	4.40	0.50	Agree
3	Interpersonal Relationship skills.	4.60	0.48	Agree	4.26	0.58	Agree
4	Adaptability and Flexibility skills.	4.02	1.29	Agree	4.17	1.27	Agree
5	Conflict Resolution skills.	4.54	1.14	Agree	3.88	0.82	Agree
6	Creative Thinking skills.	4.02	0.65	Agree	4.19	0.97	Agree
7	Leadership skills.	3.91	0.82	Agree	4.13	0.94	Agree
8	Team-working skills.	4.50	0.98	Agree	4.22	1.04	Agree
9	Analytical skills.	4.29	0.84	Agree	4.06	0.81	Agree
10	Numeracy and Accounting skills.	3.79	1.09	Agree	3.78	1.12	Agree
11	Strategic planning skills	3.89	0.98	Agree	4.02	0.79	Agree
12	Self-management skills.	4.00	0.94	Agree	3.40	0.97	Agree
13	Influencing and persuasion skills.	3.68	1.14	Agree	3.96	1.05	Agree
14	Time-management skills.	3.65	0.98	Agree	3.82	1.22	Agree
15	Project management skills.	3.90	1.50	Agree	4.02	0.93	Agree
16	Negotiation skills.	3.09	0.89	Agree	4.04	1.09	Agree
17	Problem-solving skills.	4.15	0.78	Agree	4.18	0.95	Agree
18	Networking skills.	3.88	0.81	Agree	4.00	0.90	Agree
19	Stress management skills.	4.21	0.91	Agree	4.40	0.98	Agree
20	Decision-making skills.	3.76	0.43	Agree	3.44	0.50	Agree
Grand Mean and SD		4.00	0.91		3.81	0.92	

The results as presented in table 2 indicates that all the items were seen as generic soft skills required of electrical/electronic engineering graduates for employment in oil/gas industry in Niger Delta, Nigeria. This was observed from the mean scores of both categories of respondents which are all higher that the cut-off Mean of 3.00. The standard deviation values which range from 0.43 to 1.27 show homogeneity in the responses of the polytechnic electrical/electronic lecturers and electrical/electronic supervisors in oil/gas industries.



Research Question 3: What are the ways of enhancing the employability prospects of polytechnic electrical/electronic engineering technology graduates in oil/gas industry in Niger-Delta, Nigeria?

Table 3: Ways of Enhancing the Employability Prospects of Polytechnic Electrical/Electronic Engineering Technology Graduates in Oil/Gas Industry in Niger-Delta, Nigeria

S/N	Item	Lecturers			Supervisors		
		\bar{X}_1	SD ₁	Decision	\bar{X}_2	SD ₂	Decision
1	Further Education.	3.72	0.91	Agree	4.28	0.88	Agree
2	Practical skill Training.	4.04	0.87	Agree	4.42	0.81	Agree
3	Development of problem solving skills.	4.78	0.69	Agree	3.76	0.77	Agree
4	Getting involved in teamwork.	4.22	0.84	Agree	4.26	0.93	Agree
5	Improved communication and presentation skills.	4.48	0.98	Agree	3.98	0.65	Agree
6	Engaging in Leadership development programmes.	4.02	0.73	Agree	3.72	0.89	Agree
7	Innovativeness.	4.26	0.81	Agree	4.36	0.83	Agree
8	Self-motivation.	3.78	0.56	Agree	4.34	1.02	Agree
9	Developing a sense of professionalism.	4.02	0.71	Agree	4.11	0.76	Agree
10	Networking.	3.98	1.11	Agree	4.29	1.05	Agree
Grand Mean and SD		4.13	0.82		4.15	0.86	

Table 3 revealed that all the stated items are ways of enhancing the employability prospects of polytechnic electrical/electronic engineering technology graduates in oil/gas industry in Niger-Delta, Nigeria as observed from the mean scores of the items which are all greater than the criterion mean value of 3.00. Standard deviation values ranging from 0.56 to 1.11 showed closeness in the responses of both categories of respondents.

VI. DISCUSSION

Table 1 revealed that electrical/electronic engineering graduates from polytechnics require adequate engineering and technological skills in their chosen areas of specialization for employment in oil/gas industry in Niger-Delta, Nigeria. This finding is in line with [2] who opined that graduates from technical colleges in Nigeria lacked relevant practical skills to perform electrical/electronic maintenance and repair works to the satisfaction of their employers.

Table 2 revealed some generic soft skills which electrical/electronic engineering graduates need to develop in addition to the core technical skills acquired in their chosen field of specializations to enable them secure and maintain job offers in the

Nigerian oil/gas industry upon graduation. This finding agrees with [7] who submitted that employability skills are sets of skills, knowledge and attributes which enhances the chances of an individual to gain, maintain and excel in employment. Similarly, the finding corroborates [3] who indicated the existence of three categories of employability skills globally known and grouped as core skills, generic skills and personal attributes which enable one to access and progress in an employment. From the items stated in the table therefore, it is evident that all employers need their employees to possess and develop these talents, attributes and skills for effective job performances in their establishments.

Table 3 showed that the stated items are some of the ways of enhancing the employability prospects of electrical/electronic engineering graduates for employment in oil/gas industry in Niger Delta, Nigeria. This finding agrees with [10] who stated that developing the right attitude, having right qualifications, sound technical skills and experience, flexibility and openness, sense of initiative and professionalism among others are some of the ways of enhancing your employability in the labour world. Therefore, electrical/electronic engineering students in polytechnics who want to gain employment in the



oil/gas industry at the end of their academic training should take the issue of career development seriously by developing relevant employability skills such as technical skills for example, instrumentation, control, electrical power and machine, electronics, telecommunications, information and communication technology etc. and generic soft skills for instance talents, attitudes, initiatives, flexibility, adaptability, openness, team work to mention but a few. Appropriate blend of the engineering technology and generic soft skills development makes it a lot easy to secure job placements in the oil/gas industry in Nigeria.

VII. CONCLUSION

Since employability skills help prospective employees to attract and secure good employment in oil/gas industry, electrical/electronic engineering technology graduates from polytechnics should strive to improve on their skills through effective practical training for the development of talents, aptitudes, attitudes and other relevant traits capable of making them preferred candidates over others who may as well compete with them for similar job offers. This is very important because employability skill does not only help in securing jobs but also position recipients in the oil/gas industry for higher earning job roles with increased potentials for growth and development. Development of skills and competencies are yardsticks that guarantee job security and career progression in oil/gas industry in Niger Delta, Nigeria. Consequently, all those who wish to work in the oil/gas industry are required to develop their expertise and proficiency in line with the demands of the industry.

Based on the findings and conclusion of the study, the following recommendations were suggested:

1. Electrical/electronic lecturers in polytechnics should use more of problem-based learning (PBL) approach in instructional delivery to create opportunities for students to develop problem-solving abilities together with technical skills development.
2. Supervisors of electrical/electronic engineering in oil/gas industries in Niger Delta, Nigeria should give more work roles to industrial training students in their establishments in order for them to get acquainted with the demands of the oil/gas industry even before graduation.
3. Government should provide adequate electrical/electronic engineering training

facilities in Nigerian polytechnics for effective skill development of students.

4. Electrical electronic engineering students whose dream is to work with the oil/gas industry after their graduation should seek for more training and certifications from professional oil/gas training institutes outside the academic environments.
5. Electrical/electronic engineering lecturers and other researchers in the field of engineering should float studies that have relevance in the oil/gas industry to proffer solutions to the numerous challenges arising from oil/gas industrial operations in the Niger Delta region of Nigeria.

VIII. ACKNOWLEDGEMENT

The authors sincerely appreciate their lecturers and academic mentors like Prof. P. C. Okwelle, Prof. S. T. Puyate, Dr. N. S. Amadi, Dr. A. U. Nnodim among others whose academic guidance led to the completion of this article.

IX. REFERENCES

- [1] E. O. Akpan and O. A. Udoh "Wealth Creation in Nigeria: The Need for Science, Vocational Technical and Technology Education", *International Journal of Vocational and Technical Education*, vol. 3, No 3, pp. 9-15, 2014.
- [2] M. B. Aliyu "The Need for Improving the Evaluation Procedures of Practical Projects in Technology Education: A Necessity for Sustainable National Vision" In B. Bashir (Ed). *Technology Education and the Realization of Vision 2010*", *Mini Proceedings of the 23rd Annual National Conference of the Nigerian Association of Teachers of Technology*, pp. 18-22, 2009.
- [3] Australian Learning and Teaching Council "Graduate Employability Indicators: Introduction and User Guide", Canberra: Australia, 2011.
- [4] D. Billing "Generic Cognitive Abilities in Higher Education: An International Analysis of Skills Sought by Stakeholders" *Compare*, vol. 33 No. 3, pp. 335-350, 2003.



- [5] C. Chizoba, A. Gwen and J. Chike “Oil and Gas Resources Management and Environmental Challenges in Nigeria”, *Journal of Environmental Science and Engineering*, vol. 3, No. 1, pp. 535-542, 2012.
- [6] G. Crebert, M. Bates, B. Bell, C. J. Patrick, and V. Cragnolini “Developing Generic Skills at University, during Work Placement and in Employment: Graduates’ Perceptions”, *Higher Education Research and Development*, vol. 23, No. 2, pp. 147-165, 2004.
- [7] E. Dunne and M. Rowlin “Bridging the Gap between Industry and Higher Education: Training Academics to Promote Student Teamwork”, *Innovation in Education and Training International*, vol. 37, No. 4, pp. 361-371, 2000.
- [8] A. Ejiofor “Deepening Local Participation in Oil and Gas”, *Thisday Newspapers*, November 29, 2016.
- [9] D. Hewitt “Conflicts and Harmonies among Different Aspects of Mathematical Activity: In Challenging Perspectives on Mathematics Classroom Communication”, In Christiansen IM (Eds). Connecticut: Information Age Publishing, 2005.
- [10] Y. Karen “Career Development: Enhancing Your Employability. An article published in student e-magazine”, 2019.
- [11] National Board for Technical Education “Curriculum and Course Specifications for Higher National Diploma Programme in Electrical Engineering”, Kaduna, Nigeria: UNESCO-Nigeria Project, 2006.
- [12] T. C. Ogbuanya and J. Bakari “Mechatronic Skills Required for Integration into Electronic Engineering Technology Programme in Polytechnics for Sustainable Employment of Graduates in Contemporary Nigeria” *Nigeria Vocational Association*, vol. 19, No. 1, pp. 190-197, 2014.
- [13] D. Ojerinde “Polytechnic education: Key to development”, *The Nation Newspapers*, October 29, 2015.
- [14] J. U. Okorie “Developing Nigeria’s Workforce. Calabar: Page Environs Publishers, 2000.
- [15] S. Oluwole and O. Lateef “Resource Allocation in Higher Education: A Case Study of Selected polytechnics in Nigeria” *International Proceedings of Economics Development and Research IPEDR; IACSIT Press, Singapore*, vol. 83, pp. 1-11, 2015.
- [16] C. S. Oni “Globalization and its Implications for Vocational Education in Nigeria”, *Essays in Education*, vol. 21, No. 1, pp. 30-34, 2007.
- [17] C. Palomba and T. W. Banta “Assessment Essentials: Planning, Implementing and Improving Assessment in Higher Education”, San Francisco, Jossey-Bass Inc., 1999.
- [18] O. E. Samuel “Skills Required by Farmers in Cocoa Production for Sustainable Living and Industrial Development” *Journal of Nigerian Association of Teachers of Technology*, vol. 12, No. 1, pp. 157-164, 2017.
- [19] United Nations Education Scientific and Cultural Organization “*Revised Recommendation Concerning Technical and Vocational Education*”, Paris, UNESCO Press, 2001.
- [20] A. Zaharim, Y. Yusoff, M. Omar, A. Mohammed and N. Muhammad “Engineering Employability Skills Required by Employers in Asia”. *Proceedings of the Asia 6th WSEAS, International Conference on Engineering Education*, Rodos, Greece, pp. 195-201, July 22-24, 2009.

IJEAST

INTERNATIONAL JOURNAL
OF ENGINEERING APPLIED SCIENCE
AND TECHNOLOGY

ABOUT IJEAST

International Journal of Engineering Applied Science and Technology (IJEAST) is a peer-reviewed, open access journal that publishes high-quality research papers in the field of Engineering, Applied Science and Technology.

IJEAST aims to provide a platform for researchers, academicians, and professionals to share their innovative ideas, research findings, and practical experiences with the global scientific community.

FOCUS AREAS

- Engineering
- Applied Science
- Technology
- Innovation & Development
- Interdisciplinary Studies



PEER REVIEWED

All submissions are rigorously peer reviewed to ensure quality.



OPEN ACCESS

Free and unrestricted access to research for all.



GLOBAL REACH

Connecting researchers and professionals worldwide.



TIMELY PUBLICATION

We ensure a swift and efficient publication process.



For more information, visit our website

www.ijeast.com



INTERNATIONAL JOURNAL
OF ENGINEERING APPLIED SCIENCE
AND TECHNOLOGY

✉ editor@ijeast.com

🌐 www.ijeast.com

📍 India



2455-2143