

Collaboration of Industries with Educational Institutions for Effective Training of Students with Skills Needed for Sustainable Industries

by

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Abstract

This paper centered on collaboration of industries with Educational Institutions for effective training of students with skills needed for sustainable industries. The paper looked at collaboration of industries with educational institutions as a major means of bridging the gap between training and employability. The paper also looked at what TVET and collaboration is all about with ways of improving collaboration of industries with educational institutions, like the industry financing the purchase of or donating equipment and tools for TVET institutions; institutions initializing seminars/workshop with industries; training and re-training TVET Educators and Trainers; legal framework based collaboration and establishment of an organization to administer collaboration of industries with institutions. The paper also looked at skills needed for sustainable industries like management skills, marketing skills, accounting skills, computer skills and strategies to acquire the skills. It was concluded that collaboration of the industries with TVET Educational institutions will pave way for continuous training of people with the right knowledge and skills that will foster sustainable industries. It was recommended among others that the government should adequately finance TVET programmes for effective delivery.

Introduction

Technical Vocation Education and Training (TVET) is no doubt central to the achievement of sustainable growth in industries because they need people with the right set of knowledge, skills and attitude to grow. To enable Technical Vocational Education and Training (TVET) institutions to train people with knowledge and skills needed by the industries, it is very important that they are aware of the need of industries in order to train people accordingly. The need of the industry can be made known to the institution through collaboration. Educational institutions may train people with knowledge and skills yet such people may not be accepted by the industries, because they do not need their skills since the skill may have been out dated. According to Ugwoke, Ezeji, Edeh and Etonyeaku (2016), Technical Vocational Education and Training (TVET) programs should aim to offer chances for employability of graduates in industries.

Industries can make their needs known to educational institutions when they work together to enable the institutions train people according to the needs of the industry. There is need for the collaboration of the industries and

educational institutions for continuous training or producing graduates with the right knowledge and skills needed for sustainable industries. According to the definition by United Nations Educational, Scientific and Cultural Organization in African Union (2006) and the International Labour Organization (ILO), TVET refers to “aspects of the educational process involving, in addition to general education, the study of technologies and related sciences, and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupants in various sectors of economic and social life”. In addition to technical knowledge and aptitude, increasing emphasis is on “softer” skills-communication, negotiation and team work. TVET is dispensed in public and private educational establishments, or other forms of formal or informal instruction aimed at granting all segments of the society access to lifelong learning process.

Moreover, according to Wahba (2013), “Technical Vocational Education and Training (TVET) is that part of the education system that provides courses and training programmes related to employment with a view to enable the

transition from secondary education to work for young trainees/students (social objective) and supply the labour market with competent apprentices (economic objectives). Technical Vocational Education and Training (TVET) therefore, refer to education and training which provides knowledge and skills for employment through formal, non-formal and informal means. Billet (2011) stated that the key purpose of TVET is preparation of youths for work. The principal objective of TVET is to train youths and adults alike, readying them for the labour market. Training youths and adults in isolation of the market need may lead to training graduates that may not be employed. When the industries and TVET institutions work together it will provide a very good opportunity for TVET institutions to be aware of the need of the industries and train people accordingly.

Collaboration of Industries with Educational Institutions

The need for collaboration of industries with Technical Vocational and Training (TVET) institutions cannot be over-emphasized. According to Raihan (2014) collaboration with the industries and the educational institutions is the major rising concern in many developing countries. International recommendations of the United Nations Educational, Scientific and Cultural Organization (UNESCO) for the improvement of technical education and vocational training systems systematically referred to the need to forge closer links between training and the labour market. The collaboration between the fate of technical progress and the quality of human intervention has become increasingly evident as the need for those active in the economy to be trained to use the new technologies to innovate. New skills are needed and educational institutions are required to meet the need by providing not only the minimum of schooling or vocational training, but also training for scientists, innovators and high level specialists. The outputs of the TVET institutions are the input of the industries. Raihan (2014) further stated that the TVET institutions are needed to strengthen links with industries to improve networking between academia and industries to create a better understanding of each other's needs and to identify how they can be met.

On the basis of Vocational Education, Amu and Offei-Ansah (2011) stressed that "vocational education must be based upon exhaustive study of the industries, to determine the industrial training requirements in order for the vocational school content to be truly relevant. Raihan (2014) pointed out that the collaboration of industry with TVET institutions indicates the relations between theories and practical things which are required for the job. The collaboration increases the knowledge as well as the skill of the TVET people. It enhances the employability skills. It is imperative to fashion out how the industry and the institutions can collaborate.

Ways through which Industries can Collaborate with TVET Institutions Effectively

Collaboration of industries with TVET institutions is necessary to bridge the gap between the industries and educational institutions. Raihan (2014) noted that the collaboration of industries with educational institution enhances practical training. Although in Nigerian, the major collaboration or link TVET institutions have with the industry is through Students' Industrial Work Experience Scheme (SIWES). SIWES is a skill acquisition programme designed to blend theories with practice in the industrial and commercial activities of our national economy (Tom and Nancy, 2014 and Akere, 2008). Chukwuma (2012) stated that SIWES is a cooperative intensive programme that involves institutions of higher learning and the industries or organization. SIWES enable the students of TVET institutions to match theories with practice by working in the industries/organizations for a space of three or six months. Apart from SIWES, the institutions and the industries may collaborate through the industries financing the purchase of or donating equipment and tools to TVET institutions; institutions initializing seminars/workshop with the industries; training and retraining TVET educators and trainers; legal framework base collaboration; establishing new organization to administers collaboration of industries with institutions.

Donation of Equipment and Tools for TVET Institutions

Among the challenges facing TVET effectiveness in Nigeria is inadequate finance to provide new machines, equipment and tools by TVET institutions for training students. Marope, Chakroun and Hones (2015) noted that in many developing countries, government budgets constituted a vulnerable and unreliable source of financing for TVET in order to support the effort of the government, viable industries can lend financial support to TVET institutions for procurement of modern machines, equipment and tools needed for effective training of students to suit their needs. The industries can also donate the equipment and tools in the work place to TVET institutions for use to train students that will suit the market need (Raihan, 2014).

Institutions Initiating Seminars/Workshop with the Industries

Creating awareness of new technologies, knowledge, skills and ideas by the industries and the institutions can be of great help in training people according to the demand of the market. This can be made possible by coming together of the industries and TVET institutions in form of seminar, workshop and conference. Technical Vocational Education and Training (TVET) institution can take the initiative of organizing such. Raihan (2014) stated that institutions should take collaboration initiative like organizing research for the industries and institutions for improvement of technical skills to reduce demand and supply mismatch, enhancing of employability skills and the promotion of knowledge transfer between institutions and the community. At such conference, seminar/workshop the development of new technologies can be kick started.

Training and Retraining TVET Educators and Trainers

The introduction of new technologies in the market influences the market need. As a result, the people already trained by the institutions may be thrown out of the labour market if not retrained since their services will no longer be needed while new students in TVET institutions need to be trained in line

with the new market demand for employability. According to African Union (2006) through technical revolution and innovations in science and technology, labour market needs has significantly evolved. New challenges must be met in order to match the education proposed with vocational demand. The rapid technological changes demand that workers continuously update their knowledge and skills. The knowledge dependent global economy is characterized by rapid changes in technology and related modes of work. Often, workers find themselves redundant and out of work. TVET today has the responsibility of re-skilling such workers to enable them find and get back to work (Billet 2011, Rapert, Herschbach, Dennis, 2009, McGrath, 2011 and Powes, Wildemeersch and Simon, 2014). Obviously, TVET educators are saddled with the responsibility of matching the education proposed with vocational demand. It is necessary that TVET educators and trainers be trained to learn new skills and acquire new knowledge in line with the new technologies to be able to instill same in TVET students and TVET graduates who are already working to avoid disengagement. Training new TVET educators and retraining existing ones should be continuous in nature which is called continuing TVET.

Technical Vocational Education and Training, according to Marope, Chakroun and Holnes (2015) involves ongoing training to upgrade existing skills and to develop new ones and have a much higher profile in ageing societies and knowledge economies. Industries can champion the training and retraining of TVET educators and trainers based on new technologies and skills and in turn use them to train their existing and new employees by inviting the TVET educators to the industry or sending their employees to the TVET educators in institutions for training.

Legal Framework Based Collaboration

Collaboration of the industries with educational institutions can be better achieved with legal framework. Industries have no choice than to collaborate with institutions when there is legal backing. Marope, Chakroun and Holnes (2015) noted that legislation and contractual agreement is necessary in training of workers in the companies. In the same vein laws mandating

collaboration will foster effective collaboration. Laws that will mandate the industries to declare their needs to the institutions, inform the institutions of the new technologies, knowledge and skill, giving scholarship to students to study in TVET institution and readiness to recruit them after training; giving a certain percentage of their profit as a financial support to the industries; recruiting new employees in collaboration with the institutions; sending new employees to TVET institutions for training and receiving them back after training; using TVET educators to train their existing and new employees from time to time; attending workshop/seminar organized by TVET institutions; the training of TVET Educators on new line of technologies (Raiban, 2014). With the like of the above legal backing and many more industries will collaborate well with the institutions.

Establishing New Organization to Administer Collaboration of Industries with institutions

In Nigeria we have National Drug Law Enforcement Agency (NDLEA), National Food and Drug Administration and Control (NAFDAC), which enforces drug law and administers control on food and drug in Nigeria. In the same vein, an organization or agency can be created by the government to be in charge of the collaboration of industries with TVET institutions. Such organization could be called "National Industry/Institution Collaboration Agency of Nigeria (NAICAN). The establishment of such agency will foster demand for the needs of industries, matching market needs with training, placement of trained personnel in job with the industries which will lead to economic development.

Skills Needed for Sustainability of Industries

It is obvious that the sustainability of industries depends on the skills possessed by the staff of the organization. There are many skills required for the sustainability of industries. The following skills shall be considered among others:

Management skills

There is need to manage the human and material resources of an organization in order to make the business successful and exist

continuously. According to Kukreja (2020) management is a set of principles relating to the functions of planning, organizing, directing and controlling, and the application of these principles in harnessing physical, financial, human and informational resources efficiently and effectively to achieve organizational goals. It is obvious that the human resources manage the material resources while some more qualified humans manage the less qualified humans among the human resources. There is no doubt that the area of management in an organization includes personnel management, operation management, material management and financial management/accounting skills among others. These areas of management must be well understood and operated for sustainability of industries.

Personnel Management Skills

Personnel management skills involves ability to higher the right persons with the right qualification and skill needed by the organization ability to motivate and engage employees rightly, ability to manage conflicts, among employees, ability to lead with purpose, checking the performance of each employees with respect to duty assigned to them, help the employees to learn new skills for business growth and development, helping the employees to possess competitive skill, disclosing the vision, mission and the goals of the organization to the employees and encouraging them to work accordingly, preparing opportunity for employees to develop themselves educationally, organizing on the job training for employees, ability to cooperate with partners, people and customers and ability to design and build new products (Metsker 2018, Kukreja, 2020, Coussins 2019).

Operation Management Skills

Operation management skills are necessary for coordinating different aspects of the production processes to ensure the processes are working in accordance with organizational goals and cooperation with external factors including regulators and customers. Such management skills include possession of technical information strategic problem solving ability and marketing strategies ability (UNEP 2012). Ability to change operation processes to

suit the need of the organization is also part of the operation management skills. Coussins (2019) stated that inflexible business processes can hamper a firm's growth. Moreover, operation management skills include ability to monitor the manufacturing or service process to ensure adherence to specification of duty, ability to supervise production process to ensure adherence to standard for quality, ability to supervise service process to ensure quality service delivery, ability to supervise production process to ensure non-wastage of materials (Coussins, 2019).

Material Management Skills

It is very important to manage materials effectively in an organization for continuous production or supply of goods and services. Ekwue (2006) stated that one of the major objectives of material management is to ensure that stock did not occur and that surplus stocks are not carried. Material management is the coordination of planning, sourcing, purchasing, moving, storing and controlling materials in an optimum manner so as to provide a press decided service to the customers at a minimum cost (Wamicha, 2020). The skills in materials management include: ability to determine re-order level, ability to determine minimum stock level, ability to determine maximum stock level, ability to determine re-order period, ability to determine method of material out flow (first in first out or last in first out), ability to keep record of inflow and outflow of materials, ability to store materials well (Ekwue 2006, Wamicha 2020).

Technical Skills

Technical skills are sets of abilities knowledge and expertise needed to perform practical tasks in the areas of mechanics, science, mathematics and information technology (Karley 2019). Technical skills involve the designs, construction and assessment of the technological needs of the industry (OECD/cedefod, 2014). Those technologies could be designed, constructed or purchased if it is in the market after proper assessment of the technological need of the industry. Moreover, it includes the ability to maintain the equipment and tools used in the

production or service industries for steady supply of goods and service (Farley, 2019).

Marketing Skills

No product, service, project, proposal, candidate or other initiative can be viable unless it is bought, endorsed or supported by its target constituents or customers (Doyle, 2019). Marketing skills include digital marketing skill, social media marketing skill, marketing strategies ability, ability to understand buyers needs and the sales process, internal communication ability, interpersonal skill, ability to get consumer data, ability to reward consumer loyalty, content marketing skill, content creation skill, crisis management ability in respect of product brand, guest posting on larger website and publication ability, display marketing ability, marketing accountability skill, product differentiation ability, market segmentation ability, marketing mix ability, ability to handle customers, ability to have good relationship with customers (Doyley, 2019, Jake, 2017, and Hess, 2019).

Accounting Skills

Accounting skills are essential for directly evaluating the Return-On-Investment (ROI) generated by industry which is measured financially so as to support future investment decision (Coussins, 2019). Accounting skills include ability to prepare financial statements and other financial reports, ability to prepare and review balance sheet reconciliations, ability to prepare asset, liability, and capital account entries, ability to document financial transactions, ability to provide financial information to management, ability to process customer payments and balancing accounts, ability to enter vendor invoices into the system and communicating with vendors, ability of complex research and analyze of specific accounts, ability to provide professional accounting advice and assistance, ability to analyze business organizations, trends and costs (Coussins, 2019 & Valehev, 2020).

Computer Skills

Computer skill is among the skills needed for the sustainability of industries. Computer skills are knowledge and ability

which allow you to use computers and related technology. Typically, basic computer skills include word processing, managing computer files, and creating presentations, managing database, running calculations in spread sheets, web and social, skills, graphic design, blogging, writing skills and job specific skills (Gererver, 2020).

Strategies for acquiring Skills needed for Sustainable Industries

The skills needed for sustainable industries can be acquired through

- Organizing on the job training for the staff of the organization to acquire needed skills.
- Enrolling with the technical vocational education and training institutions to acquire needed skills.
- Hiring persons who possess the needed skills.
- Enrolling for on-line training programme to acquire the needed skill.
- Attending conferences, workshops and training programmes organized by technical vocational education and training institutions to acquire needed skills.
- Attending training programmes organized by a sister industry to acquire needed skills.

Conclusion

Sustaining the industries paves way for sustainable economic development in the nation. The industries need people with the right set of knowledge and skills for sustenance. The Technical Vocational Education and Training Institutions are responsible for training the students for the required skills needed by the industries. This can be achieved with the collaboration of industries with technical vocational education and training institutions to supply the institutions with the information on skills needed for sustainable industries so as to train the students accordingly, which in turn will lead to economic development.

Recommendations

The following recommendations were made for effective collaboration of industries with TVET institutions:

1. The government should establish a legal framework for collaboration of industries with TVET institutions.
2. The government should establish an organization like National Industry/Institution Collaboration Agency of Nigeria (NAICAN) to be in charge of the collaboration of the industries and TVET institutions.
3. Technical Vocational Education and Training institutions should organize seminar, workshop and conferences with industries to make room for awareness of new technologies and skills from time to time and exchange of new knowledge and skills.
4. The government should adequately finance TVET programmes for effective delivery according to market demand.
5. Technical Vocational Education and Training educators should welcome the idea of re-training to enable them acquire new knowledge and skills which will help them discharge their duties as required.

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