

STRATEGIES FOR ENHANCING TVET-INDUSTRIAL LINKAGE FOR SKILL TRAINING AND SUSTAINABLE NATIONAL DEVELOPMENT

BY

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Abstract

The paper investigated TVET-Industry linkage for skill acquisition and sustainable national development. The study adopted a descriptive survey research design. Three research questions guided the paper. The study was conducted in Enugu State, Nigeria and the population for the study was 139 made up of 53 Technical and Vocational Education and Training (TVET) administrators and experts, and 86 industrial administrators and experts, all from Enugu State. The instrument for data collection was researchers' developed questionnaire based on five Point likert scale. The instrument was face-validated by five experts. Reliability test was determined using Cronbach Alpha which yielded a co-efficient of 0.83. The instruments were administered to the respondents and the data collected were analysed using mean and standard deviation. The findings of the study revealed the impacts of TVET-Industrial linkage to include: exchange of knowledge and technical know, improve the quality of TVET curriculum and programmes, provision of infrastructures and facilitates, provides skilled personnel for industries among others. The study further revealed the benefits of TVET-industrial collaboration to include: improves efficiency in TVET operations, provides apprenticeship training to TVET institutions, equip TVET students with employability skills, saves the cost of organizing retraining and training workshops for industrial workers among others. In addition, the findings from the study identified the strategies for enhancing TVET-industrial collaboration include among others: building good relationship between TVET teachers and industries, consultation of industries by TVET institutions during curriculum development and reform, good communication network, and building of trust. The study concluded that collaboration between TVET institutions and industries remains a viable tool for enhancing skill training of TVET students, addressing the problem of skill mismatch and providing skilled manpower needed by industries. Based on the findings, the study recommended among others that there should be collaboration between TVET institutions and industries during curriculum development and reform to cater for the skills need of the industries, government should improve funding of TVET institutions, and there should be provision of adequate infrastructure and facilities for TVET programmes.

Keywords: TVET, Industry, Linkage, Skill Training, and Sustainable development

Introduction

Unemployment is one of the greatest challenges militating against the growth and development of the Nigeria economy currently. There is increase in number of labour force and greater number of this labour force are either unemployed or underemployed, of which many of them are mainly youth. Youth unemployment in Nigeria is one of the major causes of the social vices (stealing, robbery, killing, bombing, assassination, raping among others) happening in

this country. Agomuo (2017) lamented bitterly over the consequences of unemployment situation in Nigeria. He stressed that some unemployed youths are mobilized by warlords, criminal gangs, illegal migration syndicates for committing criminal activities such as robbery, terrorism, kidnapping, assassination and internet fraud. The primary cause of unemployment and underemployment is lack or inadequate skill training and development. Many of these youths lack requisite practical and technical skills

needed for employment in industries and other sectors. Sometimes, even the employed graduates are often sent for training and retraining programme due to lack of practical skills needed by the industries. This is because the students were taught theoretically while in school with little or no practical and technical skills exposure which is very vital for securing employment in industries. This leads to skill mismatch which is very common among Nigeria graduates nowadays. The theoretical skills acquired from the school system and the practical skills needed in the industries where they would be working are not compatible (Ejiofor and Ali, 2015). To address the problem of skill mismatch and enhance sustainable national development, the administrators of technical vocational education and training (TVET) need to collaborate and partner with industries to enhance skill training which will lead to production of graduates who can fit in well with industries demand without any need for further retraining.

TVET basically refers to formal, non-formal and informal sources of skills acquisition, supported by acquiring awareness, knowledge, skills and attitudes relating to occupations in various sectors of economic life (Agomuo, 2017)). It is a form of education that advocates development of the head (knowledge), training of the hand (dexterity) and enriching the heart (conscientiousness and painstaking) (Okoye & Okwelle, 2013). TVET according to UNESCO and the International Labour Organization (ILO, 2012) refers to “an aspect 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 occupations in various sectors of economic and social life". TVET programmes are designed to equip the students/trainees with technical and practical skills needed for employment in industries and related occupations. This helps in bridging the gaps that exist in practical skills acquisition and classroom experiences.

TVET has been considered as the driving force for sustainable development. It plays important roles in implementing and promoting sustainable development goals. TVET institutions are major suppliers of workforce who will be in the forefront in dealing directly with sustainable issues (Paryono, 2017). TVET is arguably remains the best means of skills development and economic improvement for the teeming youths anywhere in the world (Agomuo, 2017). TVET is very vital for developed countries in the world to maintain competitiveness and crucial for countries in transition (like Nigeria) to serve as the driver for moving into a developed economy (Okoye & Okwelle, 2013). TVET is a major agent for industrial development as well as for social progress of any country Ansah & Ernest (2013). TVET has the potential to help economies become more sustainable (Marope, Chakroun and Holmes, 2015). In addition, TVET fosters youth employment and entrepreneurship, promotes equity and gender equality and facilitates transition to green economies and sustainable societies. The goals and objectives of TVET cannot be effectively actualized without collaboration with industries.

Industries are organizations that engage in mass production of goods and or rendering of services which is operated by a team of people made up

of manager, skilled and unskilled workers (Idris & Rajuddin, 2012). Industries play vital roles to the economy, in fact, the industries are the drivers of the economy. Industries provide goods and render services thereby increasing the gross domestic products (GDP), creates employment, enhance foreign exchange among others. Industries can be owned by government or private individuals, although greater percentage of the industries all over the world are more of private owned than government. One major challenge facing some of the industries in this 21st century is inadequate or lack of skilled manpower. This is because most of the graduates produced in Nigeria tertiary institutions lack technical and practical skills needed by industrials for maximum production. Due to this, some of the industries in Nigeria resulted to hiring experts from foreign countries with a very high cost.

In spite of effort of TVET institution, there are still growing concerns among our industrialists that our graduates lack adequate practical background and relevant job-related skills for employment in industries (Ide, 2013; Ikeoji & Agwudike, 2006). This problem can be solved if there is collaboration between industries and TVET institutions. Although, Nigeria government established the Industrial Training Fund (ITF) which would enable the students acquire employable skills. The ITF was mandated to improve students Industrial Work Experience Scheme (SIWES) to enable them acquire employability skills needed in industries (Ekponyong, 2011; Egbri and Chukwuedo, 2013). The effort of ITF towards SIWES is certainly not enough in achieving desired results of skill training. ITF alone cannot bridge the skill

gaps. This calls for strong industrial linkage with TVET institutions for enhancing students' skill acquisition for sustainable national development.

Sustainability according to Brundtland World Commission report in Kotob (2011) is the development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs". Wiersum (2015) pointed out that the concept of sustainability was originally coined in forestry, where it means never harvesting more than what the forest yields in new growth. Sustainable development is very vital for preserving the nation's resources not only for present use but also for future generation use. For TVET programmes to be relevant and to enhance sustainable national development, there is need to address the problem of skill mismatch among graduates from Nigeria tertiary institutions which make them unemployable.

It is very worrisome that many of the graduates from Nigeria universities and other tertiary institutions are unemployable due to lack of practical and technical skills which the industries required even after spending four, five, or six years in school. Even those employed, re-training or training programmes or workshops are usually organized to enable them acquire the skills needed to be effective in that company or industry. While some of the graduates end up accepting low paid jobs because they lack the skills the high paying industries required of them. This has been a major cause of high unemployment and underemployment rate in Nigeria. In order to address the problem of skill mismatch, there is need to have a strong linkage between TVET institutions and industries for the

production and development of skilled manpower needs in the country. Hence, this study aimed at determining strategies for enhancing TVET-industrial linkage for skill training and sustainable national development.

Purpose of the Study

The major purpose of the study was to determine the strategies for enhancing TVET-industrial linkage for skill training and sustainable national development. Specifically, this study determined:

1. the impacts of TVET-industry linkage for sustainable national development.
2. the benefits of TVET and industrial collaboration.
3. the strategies for enhancing effective collaboration between TVET and Industries for sustainable national development.

Research Questions

The study was guided by the following research questions

1. What are the impacts of TVET-industrial linkage for sustainable national development?
2. What are the benefits of TVET and industrial collaboration?
3. What are the strategies for enhancing effective collaboration between TVET and Industries for sustainable national development?

Methodology

The study adopted a descriptive survey research design and it was carried out in Enugu State, Nigeria. Enugu state is one of the five states in south-east geopolitical zone in Nigeria. Enugu

state was chosen for this study because, Enugu state has both federal university (University of Nigeria, Nsukka (UNN) and state university (Enugu State University of Science and Technology (ESUT) and both of them offer TVET programmes both at undergraduate and postgraduate levels. In addition, Enugu State has Federal College of Education, Eha-Amufu that also offer TVET programme. Also, industries (small, medium and large scales) are found in Enugu State as well. The population for study was 139, which consisted of 53 TVET administrators and experts drawn from UNN, ESUT and College of Education Eha-Amufu; and 86 industry experts and administrators drawn from Medium and large-scale industries located in Enugu State. The instrument used for data collection was structured questionnaire developed by the researchers. The instrument was divided into three sections A, B and C with each section addressing one research question. The instrument was based on five-point rating scale of strongly Agree (SA), Agree (A), Undecided (UD), Disagree (D) and Strongly Disagree (SD) with nominal values of 5, 4, 3, 2 and 1 respectively. The instrument was face validated by five experts; which consisted of three experts from TVET institutions in Enugu State and two industrial experts from Enugu state. The instrument was further suggested to reliability test using Cronbach Alpha reliability method which yielded reliability coefficient of 0.83. The instruments were administered to the respondents by the four researcher assistants. All the instruments administered were all collected and analysed using Mean and standard deviation. Based on the 5-point Likert scale, any item with mean response of 3.50 and above was regarded as agree, while any item with means less than

3.50 was regarded as disagree. The social was used in analysing the data.
package for social science (SPSS) version 20.0

Results

Research Question 1

What are the impacts of TVET-Industrial linkage for sustainable national development?

Table 1: Mean ratings of the impacts of TVET-Industrial linkage for sustainable national development.

S/N	Item Statement	Mean	S.D	Remark
1.	Exchange of knowledge and Technical know-how	4.59	0.63	Agreed
2.	Helps in improving the quality of TVET curriculum and programmes	4.54	0.84	Agreed
3.	Aids in provision of infrastructures and facilitates	4.93	0.85	Agreed
4.	Collaboration in carrying out research and developmental projects	4.88	0.78	Agreed
5.	Collaboration in accepting students on industrial training attachment	4.85	0.79	Agreed
6.	Provides scholarship awards to the best students by the industries	4.81	0.58	Agreed
7.	Assist in proper evaluation of TVET students' industrial work experience programme	4.79	0.74	Agreed
8.	Collaboration in organising practical and on the job training for TVET lecturers and instructors	3.88	0.87	Agreed
9.	It enables the employment of best TVET students	4.38	0.86	Agreed
10.	It gives room for consultancy services for both TVET institutions and industries	4.77	0.69	Agreed
11.	Strong linkage TVET institutions and industries can lead to sustainable national development	4.57	0.58	Agreed
12.	Provides skilled personnel for industries	4.59	0.62	Agreed

Key: Total number of respondents (N) = 139, Mean (M), Standard Deviation (SD)

Data presented in Table 1 showed that respondents agreed on all the items on the impact of TVET-industrial linkage with means which range from 3.88 to 4.93. All the items had a standard deviation ranging from 0.58 to 0.87 which indicated that the respondents are not too far from the mean and were close to one another in their opinions.

Research Question 2

What are the benefits of TVET and industrial collaboration?

Table 2: Mean Responses of Respondents on the benefits of TVET and Industrial sectors collaboration for sustainable national development.

S/N	Item Statement	Mean	S.D	Remark
1.	Improves efficiency in TVET operations	4.75	0.87	Agreed
2.	Provide apprenticeship training to TVET institutions	4.67	0.62	Agreed
3.	Equip TVET students with employability skills	4.34	0.85	Agreed
4.	Encourages diversification in the economy	4.58	0.84	Agreed
5.	Saves the cost of organizing retraining and training workshops for industrial workers	4.25	0.95	Agreed
6.	Allows for exchange of technological innovations	4.63	0.76	Agreed
7.	Facilitates industrial staff/student exchange programme	4.65	0.88	Agreed
8.	Uplifts the image of TVET programme	4.00	0.66	Agreed

9.	Ensures involvement of industries in development of TVET programmes	4.66	0.82	Agreed
10.	Improves service delivery	4.89	0.75	Agreed
11.	Facilitating creative and innovative approaches	4.11	0.70	Agreed
12.	Adequate funding of TVET institutions	4.54	0.58	Agreed
13.	Accessing technical and managerial skills and expertise	4.31	0.73	Agreed
14.	Brings about speedy, efficient and cost-effective delivery of projects	4.95	0.91	Agreed
15.	It provides quality research findings for industrial utilization	4.23	0.71	Agreed
16.	Helps in building good relationship among experts in industries and TVET institutions.	4.91	0.84	Agreed

Key: Total number of respondents (N) = 139, Mean (M), Standard Deviation (SD)

Data presented in table 2 revealed that the respondents agreed in all the items on the benefits of TVET and Industry collaboration with the means ranging from 4.00 to 4.95. The standard deviation of the items ranged from 0.58 to 0.95 which indicated that the respondents are unanimous in their responses as they are not far from the mean.

Research Question 3

What are the strategies for enhancing effective TVET and Industry sector collaboration for sustainable national development?

Table 3: Mean responses on the strategies for effective TVET and Industry sector collaboration for sustainable national development.

S/N	Item Statement	Mean	S.D	Remark
1.	Building good relationship between TVET teachers and industries	4.67	0.81	Agreed
2.	Consultation of industries by TVET institutions during curriculum development and reform	4.33	0.72	Agreed
3.	Good communication between TVET institutions and the industries	4.47	0.74	Agreed
4.	There should be a signed memorandum of understanding between industries and TVET institutions regarding collaboration.	4.56	0.61	Agreed
5.	Relevant research and training	4.13	0.58	Agreed
6.	Hiring/promotion linked to industry –related activities	4.27	0.73	Agreed
7.	Creating a change-agents to carry out the daily activities of systemic change.	4.45	0.76	Agreed
8.	TVET system must be labour-market relevant, equitable, efficient and of high quality.	4.39	0.67	Agreed
9.	Building trust and shared vision between TVET institutions and industries	4.57	0.72	Agreed
10.	The TVET institutions should keep pace with Technological advancements and upgrade their equipment and tools.	4.43	0.73	Agreed
11.	Establishing institutionalized mechanisms to manage and enhance resource for school community partnerships.	4.37	0.67	Agreed
12.	Development of institutional policy.	3.98	0.86	Agreed
13.	Government Supports effort to create synergies and share responsibilities.	4.45	0.48	Agreed

Key: Total number of respondents (N) = 139, Mean (M), Standard Deviation (SD)

Data presented in Table 3 showed that the respondents agreed on all the items on the strategies for enhancing effective TVET and Industry sector collaboration for sustainable national development with a mean response ranging from 3.98 to 4.67. All the items had a

standard deviation ranging from 0.48 to 0.86 which indicated that the respondents are not too far from the mean and were close to one another in their opinions.

Discussion of the Findings

The findings in table 1 showed that the impacts of TVET-Industrial linkage for sustainable national development are: exchange of knowledge and technical know-how, improve the quality of TVET curriculum and programmes, provision of infrastructures and facilitates, collaboration in carrying out research and developmental projects, collaboration in accepting students on industrial training attachment, provides scholarship awards to the best students, assist in proper evaluation of TVET students' industrial work experience programme, collaboration in organising practical and on the job training for TVET lecturers and instructors, enables the employment of best TVET students, gives room for consultancy services for both TVET institutions and industries, provides skilled personnel for industries. This finding is in line with the findings of Arlow (2011) who stated that school-industry partnership will provide students with insights into the business world, thereby enhancing their skills development. Also, the finding is in agreement with Dambare (2016), who observed almost all the TVET curricula were drawn up without consultation with experts in the industries. The author further stated that collaboration of TVET institutions and industrial sectors could lead to development of good quality curriculum which will lead to skill acquisition and development among TVET students. The finding is also in line with UNESCO (2006) who stated that exchange of

knowledge and technical know-how, collaboration of TVET and industrial experts in undertaking of research and developmental project will improve the quality of TVET programme which will lead to sustainable national development.

The findings in Table 2 indicated that the respondents agreed on all the items as benefits of TVET and industrial sectors collaboration. The findings revealed the following benefits of TVET and industry collaboration to include: improves efficiency in TVET operations, provides apprenticeship training to TVET institutions, equip TVET students with employability skills, encourages diversification in the economy, saves the cost of organizing retraining and training workshops for industrial workers, allows for exchange of technological innovations, facilitates industrial staff/student exchange programme, uplifts the image of TVET programme, ensures involvement of industries in development of TVET programmes, improves service delivery, facilitates creative and innovative approaches, enhances adequate funding of TVET institutions, accessing technical and managerial skills and expertise, brings about speedy, efficient and cost-effective delivery of projects, provides quality research findings for industrial utilization, build good relationship among experts in industries and TVET institutions. The findings are in agreement with Okoye and Okwelle (2013) that maintained that collaboration of TVET institutions and industries helps in providing practical skill training to students, increased funding of TVET institutions, strengthens guidance and counselling services among other benefits. The finding is also in line with Tansen (2013) who

maintained that involvement of employer representatives in curriculum development will assist in identifying occupations areas where training gap exists and specify the required standard which will help in development of skilled manpower for industries. This will also save the industries the cost of organizing training for newly recruited workers and retraining programme for old industrial workers. The finding is also in incongruent with Fannell (2007) who stated that fostering partnership between TVET institutions and industries can lead to sharing of personnel, knowledge and skills between the two sectors which will in turn improve their performances or productivities. The findings are also in line with Osman, Omar, Kofi, Mat, Darus and Rahman, (2008), according to the authors, technical institutions should have closed linkages with the world of work to solicit support of industry in the enhancement of practical training activities which will lead to donation of equipment, tools, staff exchange programme, and students on work experience attachment. Enhanced linkage between TVET institutions and industrial sectors will provide the institutions access to facilities that are not in school and expose the students to acquire skills relevant to the industries demand.

Table 3 revealed that the respondent agreed with the items on the strategies for enhancing TVET and Industrial sectors collaboration for sustainable national development. The strategies discovered are: building good relationship between TVET teachers and industries, consultation of industries by TVET institutions during curriculum development and reform, good communication between TVET institutions and the industries, provision of a signed

memorandum of understanding between TVET institutions and industries regarding collaboration, relevant research and training, hiring/promotion of industries related activities, creating a change-agents to carry out the daily activities of systemic change, making TVET system a labour-market relevant, building trust and shared vision between TVET institutions and industries, TVET institutions should keep pace with technological, and establishing institutionalized mechanisms to manage, enhance resources for school community partnerships. development of institutional policy, and government supports effort to create synergies and shared responsibilities. The findings are in line with Ezeji (2011) who stated that the students' trainees gain more through the collaboration and sharing of knowledge if there exist a partnership between the TVET institutions and industries. The findings are also in line with Zain (2008) who opined that building strong communication network and trust are vital for strengthening partnership between two or more agencies. This implies that TVET and industrial experts need to create effective communication network and build trust among themselves which will help to enhance good partnership. The findings are also in congruent with Adebambo (2017) who stressed that industries should always be consulted during curriculum development and reform in order to enhance the quality of TVET programmes for sustainable national development. By so doing, industries will be able to provide areas with skill gaps which could be included in the curriculum.

Conclusion

The need for providing skilled manpower for industrial and national growth and sustainability

cannot be over-emphasised. This cannot be achieved with the current way TVET programmes and institutions are run in Nigeria. 3. This calls for linkage between TVET institution and industries. The industries need to be an integral part of TVET systems in areas of curriculum planning, development and reform, skill training of TVET students in form of attachment as well as awarding scholarship and employment to outstanding TVET students. This should be done by adopting the following strategies such as creating a good 5. communication network, building of trust, 6. signing of a memorandum of understanding between TVET institutions and industries among others. In conclusion, partnership and collaboration between TVET institutions and industries remains a viable tool for enhancing skill training of TVET students thereby addressing the problem of skill mismatch and providing skilled manpower needed by industries which will in turn lead to desired sustainable national development.

Recommendations

Based on the findings emanating from this study, the following recommendations are made:

1. There should be strong collaboration and partnership between TVET institutions and industries. TVET institutions should always collaborate with industries during curriculum planning, development and reform in order to cater for the skills need of the industries.
2. There is need to reform the existing TVET programmes. The current TVET programmes need to be reformed to take into consideration of the 21st century skills and also to make the TVET programme practical oriented-based. Industrial

experts should be invited by TVET institutions during the reform process.

4. There should be adequate funding of TVET institutions and programmes by the Nigeria government and other relevant agencies. For TVET programmes to be functional and effective, proper funding is inevitable. Also, good partnership between TVET institutions and industries can help in providing adequate funding of the programme.

5. Provision of adequate infrastructure and facilities for TVET programmes. Government through the Federal Ministry of Education should provide sufficient infrastructure and facilities to enable TVET institutions to be effective and functional in providing the skilled manpower needs by the industries. Also, TVET institutions should seek for partnership and collaboration with foreign, national, and local agencies to enhance adequate provision of facilities.

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