Improving Policy Initiatives of School-Industry Collaboration for Sustainable Development in Nigeria TVET System

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Abstract

The study focused on improving policy activities of school-industry collaboration to ensure skill acquisition for sustainable development in Nigeria TVET system. A descriptive survey research design was employed for the study. Two research questions and null hypotheses guided the study. The population for the study was 72. There was no sampling, the entire population was studied and structured questionnaire consisting of 30 items was used for collecting data from the respondents. The instrument was validated by three experts, Cronbach alpha method was used to determine the reliability of instrument which yielded a coefficient of 0.74. the 72 copies of the instrument were administered to the respondents by the researchers and research assistants on one to one basis while the instrument were analyzed using mean to answer the research questions while t-test statistic was used to test the hypotheses of no significant difference at 0.05 level significance and degree of freedom with the help of statistical package for social sciences (SPSS version 20). The study found that the contents of industrial practice policy and administration link strategies that should exist in collaboration with schools and industries to ensure skill acquisition for sustainable development of TVET system and recommend among other that there should be revaluing in the policy initiatives of school-industry collaboration for sustainable development of TVET system in Nigeria.

Introduction

Education is the oldest field of endeavor known to humanity. Nations are in a race to develop and improve their educational system. According to spring (2015), Education, Skills and Knowledge have become crucial determinant of a persons' and a nation's productivity in this century. Education is a tool that improves functional and analytical ability and thereby opens up opportunities for individuals and groups to achieve greater access to labour markets and livelihoods. Education is not only an instrument of enhancing efficiency but is also an effective tool of widening and augmenting democratic participation and upgrading the overall quality of individual and societal life. To this end, one of the philosophy of education as enshrined in the National Policy on Education (N.P.E., 2013) was the belief that education is an instrument of national development and social change.

International policy developments which aim to support these goals of education include the United Nation Decade of Education for Sustainable Development (UNESCO, 2012) and the United Nation Sustainable Development Goals, which, in goal 4.7 stipulates that by 2030 we must ensure that all learners, acquire knowledge and skills needed to promote sustainable development, including among others through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship, and appreciation of cultural diversity and of culture's contribution to sustainable development (UN, 2015). Development education is an educational process that increases awareness and understanding of a rapidly changing, interdependent and unequal world (Irish Aid 2006), while education for sustainable development centers on a new vision of education which empowers learners to assume responsibility for creating and enjoying a sustainable future (UNESCO, 2002). Therefore, sustainable development education for skill acquisition aims to highlight the inequalities and injustices present across our globe, and to advocate action for global social justice. Sustainable development education also

reflect the active role of learners to face and resolve global challenges and ultimately to become proactive contributors of a more just, peaceful, tolerant, inclusive, secure, and sustainable skill acquired for the Nigeria development. The education for sustainable development is acquired through the acquisition of solution-oriented skills and empowerment, the Sustainable Development Goals set out by the United Nations advocate that all learners will have the knowledge and skills needed to promote education sustainable development. Development education, that is education for sustainable development and global citizenship education are deliberate educational interventions, which all address global justice and sustainability issues. The Sustainable Development Goals decided by the United Nations include a goal centered on learners gaining the necessary knowledge and skills to promote sustainable development (UNESCO 2015). Feinberg (2006), also draws attention to the shared moral understandings required to sustain and reproduce liberal, pluralist democracies learners through TVET.

TVET education in general can be seen as a discipline that empowers learners with constructive, analytical skills, knowledge and critical thinking that build craftsmanship, practical experience and practical problem solving. According to UNESCO (2011), Technical and Vocational Education and Training (TVET) is concerned with the acquisition of knowledge, skills and attitude for the world of work. In the words of Baqadir, Patrick, & Burns, (2011) TVET has as one of its goals which aim to meet the educational demands of learner who seek to earn a living through skill oriented enterprise. Baqadir, also went on to state that, to start and build economic development, technological change and along with market needs, have reliability assessment and supplies industry market in the world to put the job in the future. TVET encompasses programmes that provide participants with skills, knowledge and aptitudes that enable them to engage in productive work, adapt to rapidly changing labour markets and economies, and equally participate as responsible citizens in their respective societies. The goals of TVET, according to Federal Republic of Nigeria in the National Policy on Education (N.P.E, 2013)

include among others: provision of trained manpower in the area of applied sciences, technology, business, advanced craft as well as proving training and related skills for becoming self-reliant economically through TVET programs.

The performance and quality of TVET providers could be improved through policy activities, Policy according to Sherri (2005), is concerned with the legislation, programs and practices that govern the *substantive* aspects of community work. These involve, for instance, the collection of statistical information on neighborhoods and the evaluation of complex community programs. Policy activities by contrast, are developed by two or more organizations, each of which has the ability or mandate to deal with only one dimension of a given situation. Policy activities or integrated policy is created between parts of an organization or among organizational components that are similar in hierarchical position (Smith, 2003). If schools are to work effectively with other sectors, they must seek ways to open up the policy process. In fact, complex issues are being addressed increasingly through an approach known as comprehensive community initiatives (Torjman & Leviten-Reid, 2003). These comprehensive initiatives explicitly encourage partnering and collaborative arrangements. They recognize the value of contributions from diverse backgrounds, networks and areas of expertise which in tells collaborative arrangements and is being driven partly by the pressure to enhance performance and achieve measurable improvements in skill acquisition and service delivery through the process of collaboration.

Collaboration means sharing obligations and involving school in decision making about industrial practices. In this contrast, collaboration is defined as shared values, decision making about industrial practice and policy activities of schools, which promotes students' performance and the professional development of skill acquisition for sustainable development in TVET system. Collaborative learning could be in many forms: face-to-face, computer mediated (computer supported collaborative learning), joint or labour divide through the industrial activities. Each form of collaborative learning is simply a mutual engagement of participants in a coordinated

effort to solve a problem together (Lai, 2011). Also in the view of Markova and McArthur (2016) collaboration intelligence is the capacity of an individual to think with others towards accomplishing a unique project that matter to everyone in the group. However, collaborative learning and collaborative intelligence can be effectively achieved through school-industry policy.

Industrial policy is the process of promoting productive capabilities and learning processes as well as enhancing productive capacities, and shaping patterns and processes of productive transformation aimed at higher productivity growth as well as enhancing the quantity and quality of jobs. Industrial policies need to be designed with a view to fostering structural transformation patterns that have the potential to accelerate the generation of not just more jobs, but also more productive and better jobs (Jose, Irmgard, & Richard 2010). Productive jobs lead to higher levels of income, reduced poverty, an improved standard of living and stronger domestic demand, by providing decent wages, good working conditions, training, social protection and respect for workers' rights (Greenwald & Stiglitz, 2013) expand "infant industry" arguments to the case of an infant economy, discussing how well-designed government policies on trade, industry, schools and intellectual property can help create a learning society, and arguing that "creating a learning society is more likely to increase standards of living than the small, one-time improvements in economic efficiency or those that derive from sacrifices of consumption today to deepen capital industries.

The industry is more than a partner in the TVET system; in fact, it is the key driver, thus institutional efforts are geared to meet their needs. Industry plays the major role in the setting of occupational and competency standards; it is the underbelly of the national qualifications framework and quality assurance provisions hence industry is the nuts and bolts of a quality and effective TVET system. According to Meredith (2002) industry is used broadly to include all labour market sectors not just manufacturing or natural resources. Industry means, "any business, trade, undertaking, manufacture, or calling of employers and includes any calling, service, employment, handicraft or industrial occupation or avocation of workmen (Malhotr's, 2004). An effective TVET system within a country is a critical pillar of any successful economy, it can serve as the impetus to boost the value of the nation and it's Gross Domestic Product (GDP) in the global marketplace. The effectiveness of workplace learning and productivity of workers or manufacturing in industries is the nature and quality of the policy activities of school-industry collaboration and administration link with TVET system.

Problem of the Study

The goal of TVET is to learn skills, practice it and be perfect in it for sustainable development. Hence, TVET system were established to train individuals to acquire practical skills, basic scientific knowledge, and attitudes required as craftsmen at sub-professional level, to meet the manpower needs for national development. Most of the TVET graduates in Nigeria are good in the theoretical aspect of the training, while their performance level in the practical aspect is very low. A greater proportion of the problems confronting TVET system in Nigeria today is rooted in the failure of TVET to impart appropriate skills, knowledge and attitudes through collaboration of policy initiatives between schools and industry for gainful or self-employment upon graduation because there is no laid down guideline or strategy for comprehensive policy activities of school-industry collaboration in different trade areas.

Another key challenge is the improvement in the quality and labour market relevance through the introduction of competency standards, competency-based training, and the promotion of school and industry based collaboration. There is need to further align TVET graduate outcomes to industry demand for higher skill level. Currently, there is mismatch between the skills required in industries and the skills of graduates of TVET entering the labour market. Again an inclusive approach to skill development for sustainable development should include schools increasing their overall capacity to deliver technology skills to everyone in different trade's area in TVET for an appropriately skilled workforce. Schools needs to adjust their education and learning system to respond to the changing demands for human resources and to

compete in the global economy also there is need to raise the status of TVET within the communities to attract students from a wide range of backgrounds

Despite the widely acclaimed importance and need for close and effective collaboration between schools and industries, in preparing TVET graduates, there appears to be no laid down comprehensive policy activities guideline for all important collaboration. If such a comprehensive policy activities guideline or strategy is not articulated and followed, it will be very difficult to evolve any strategies for effective collaboration between schools and industries. The result would be the continued production of technically incompetent TVET graduates. Hence the need to identify laid down comprehensive policy activities collaboration between schools and industries to ensure skill acquisition for sustainable development in Nigeria TVET system.

Research Questions
1. What are the industrial practice policies that should be adopted in school programmes for sustainable development of TVET
2. What are the administrative link strategies that should exist in collaboration with schools and industries for sustainable growth of TVET

Hypotheses

H_{01}: There is a significant disconnect between the worlds of employers and the training institutions of TVET on the industrial practice policy that should be adopted in school programmes for sustainable development of TVET system.

H_{02}: There is a significant disconnect between the worlds of employers and the training institutions of TVET on the administrative link strategies that should exist in collaboration with schools and industries for sustainable growth of TVET.

Methodology

The study adopted a descriptive survey design. Nworgu (2010), saw descriptive survey as one in which a group of people or items is studied by collecting and analyzing data from only a few people or items considered to be representative of the entire group. Descriptive survey design was therefore suitable for this study since it tends to obtain data from technical college teachers and industrial training managers on the role of industrial practice policy and administration link strategies in improving school-industry collaboration to ensure skill acquisition for sustainable development in Nigeria TVET system. The major purpose of this study is to find improving policy initiatives of school-industry collaboration for sustainable development in Nigeria TVET system, two research questions and one hypothesis guided the study.

The population for the study was 72 persons. This consists of 60 technical teachers in three accredited technical colleges in Enugu State registered under National Board for Technical Education (NBTE) as well as 12 industrial training managers registered under the Ministry of Commerce and Industry in Enugu State. Due to the relatively small size of the population, there was no sample for the study. A structured questionnaire made up of 30 items was developed for collecting data in accordance with the research questions. The instrument was in two sections A and B. A was on personal data, while section B, made up of two sub-sections was constructed to elicit response on industrial practice policy that should be adopted in school programmes for sustainable development of TVET and administration link strategies that should exist in collaboration with schools and industries for sustainable growth of TVET. Each question was assigned a five-point Likert scale and response option assigned thus: Strongly Agree (SA), Agree (A), Undecided (U), Disagree (D), Strongly Disagree (SD), with numerical values of 5,4,3,2 and 1 respectively.

Three lecturers from the Department of Industrial Technical Education University of Nigeria Nsukka validated the instrument for the study. Cronbach alpha method was used for obtaining the reliability of the instrument. A coefficient of 0.74 was obtained. The 72 copies of the questionnaire were administered on the respondents with the help of three research assistants. The data collected from the study were analyzed using mean for answering the research questions. The t-test is used for testing the hypothesis at probability level of 0.05 with the help of statistical package for social sciences

(SPSS Version 20). The real limit of numbers as regards to mean response of the items is as follows: 4.50 – 5.00 = Strongly Agree (SA), 3.50 – 4.49 = Agree (A), 2.50 – 3.39 = Undecided (U), 1.50 – 2.49 = Disagree (D), and 1.00 – 1.49 = Strongly Disagree (SD).

Results

The results for the study were obtained from the research questions answered through data collection and analyzed with the help of SPSS version 20.

Table 1: Mean Rating and Standard Deviation of the Industrial Practice Policy that should be adopted in School Programmes for Sustainable Development of TVET System

S/N	Items	Mean	S.D	Remarks
1	Increasing investment in technical education diversification policy of funding sources.	4.27	0.69	A
2	Practical courses or in-service training of TVET teachers and students.	4.33	0.99	A
3	Establishing different occupational skill training unit and appointing qualified trainers having craftsmanship adequacy.	4.37	0.73	A
4	Presence of an incentive system for employment of TVET graduates in industries.	4.25	0.55	A
5	Develop social skills that helps student learn to engage appropriately in social interactions.	4.08	0.86	A
6	Develop and enhance team building skills and interpersonal skills among various groups in technical colleges.	4.58	0.64	SA
7	Follow established procedures for group participation in policy delivery.	4.70	0.45	SA
8	Training station in schools must be an exact replica of the world of work.	4.65	0.42	SA
9	Establish and operate a production unit for on-the-job training of students.	4.76	0.63	SA
10	Training and import the necessary skills leading to enterprising and self-reliant economically.	4.22	0.50	A
11	Instruction in optimization of theory in implementing certain designs and processes.	4.09	0.60	A
12	New qualifications and assessment tools should be developed and endorsed or recognized by the industry	4.00	0.71	A
13	Adopt to changes in priorities in economic development and industrial structural adjustment requirements	3.90	0.82	U

The data presented in Table 1 revealed that items 6, 7, 8, & 9 had their mean ranging from 4.58 to 4.76 which fall within the response option of strongly agreed. This implies that the respondents strongly agreed that the items are the industrial practice policy that should be adopted in school programmes for sustainable development of TVET system. Table 1 also shows that items 1, 2, 3, 4, 5, 10, 11, & 12 had their mean ranging from 4.00 to 4.37 which fall within response option of agreed. This means that the respondents agreed that the items are the industrial practice policy that should be adopted in school programmes for sustainable development of TVET system. It was also found from Table 1 that item 13 had a mean of 3.90 which fall within the response option of

undecided. This means that the respondents were undecided that adopting changes in priorities in economic development and industrial structural adjustment requirements are one of industrial policy that should be adopted for sustainable development of TVET system.

Table 2: t-test Analysis of the Industrial Practice Policy that should be adopted in School Programmes for Sustainable Development of TVET System

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	**Sig.**	**T**	**df**	**Sig. (2-tailed)**	**Mean Difference**	**Std. Error Difference**	**95% Confidence Interval of the Difference**	
									Lower	**Upper**
Industry practice policy	Equal variances assumed	11.921	.001	6.280	70	.000	7.08333	1.12795	4.83372	9.33295
	Equal variances not assumed			14.122	59.000	.000	7.08333	.50157	6.07968	8.08698

The data presented in Table 2 indicated that there was a significant difference in the mean rating of responses of employers and the training institutions of TVET on the industrial practice policy that should be adopted in school programmes for sustainable development of TVET system. Since their significance level was 0.001 which are less than 0.005 level of significance. Therefore, the null hypothesis of no significant difference was rejected for the cluster items.

Table 3: Mean Rating and Standard Deviation of the Administration link Strategies that should exist in Collaboration with Schools and Industries for Sustainable Growth of TVET System

S/N	Items	Mean	SD	Remark
1	Increasing the quality, efficiency, and attractiveness of technical college training.	4.00	1.10	A
2	Development of international mobility in technical college and training.	4.43	0.86	A
3	Improvement of the qualifications of the teacher and administrators in TVET schools.	4.76	0.42	SA
4	Strengthening the links between technical colleges and labour market.	3.95	0.81	A
5	Promotion of the use of information technology.	4.63	0.63	SA
6	Strengthening management and expansion of partnerships between technical colleges and industries.	4.69	0.46	SA
7	Implementing technical education policy within the scope of non-formal and formal education	4.26	0.91	A
8	Planning, development, and evaluation of technical education should be made in all types and degrees of formal, non-formal and apprenticeship education.	4.31	1.03	A
9	Promotion of adult learners to continue technical training.	3.44	1.17	U
10	Preparation of learning outcomes at different levels should be made known to learners with the help of sectors involved.	4.48	0.71	A
11	Crediting activities such as internship, job training, and counselling and guidance information system.	4.69	0.46	SA

12	Using laboratory infrastructures of the industries for academic and industrial research and development activities by technical colleges.	4.08	1.21	A
13	Formulation of law by the federal government to compel co-operation between technical colleges and industries.	4.50	0.90	A
14	Setting up of technical committee for proper implementation of school-industry relations, members which should comprise of industrial training managers and National Board for Technical Education.	4.37	0.86	A
15	Setting up of industrial committee members of which should comprise of representative of technical college teachers, industrial training managers, and ministry of education, labour and trade unions.	4.34	0.93	A
16	There is need to estimate the job placement rates of TVET graduates	4.81	0.90	SA
17	Enhancing employability of TVET graduates	4.01	0.89	A

The data presented in Table 3 revealed that items 3, 5, 6, 11, and 16 had their mean ranging from 4.63 to 4.81 which fall within the response option of strongly agreed. This implies that the respondents strongly agreed that the items are the administration link strategies that should exist in collaboration with schools and industries for sustainable growth of TVET system. Table 3 also shows that items 1, 2, 4, 7, 8, 10, 12, 13, 14, 15, and 17 had their means ranging from 3.95 to 4.48 which fall within response option of agreed. This means that the respondents agreed that the items are the administration link strategies that should exist in collaboration with schools and industries for sustainable growth of TVET system. It was also found from Table 3 that item 9 had a mean of 3.44 which fall within the response option of undecided. This means that the respondents were undecided that the promotion of adult learners to continue technical training is one of the administration link strategies that should exist in collaboration with schools and industries for sustainable growth of TVET system.

Table4: t-test Analysis of the Administration Link Strategies that should exist in Collaboration with Schools and Industries for Sustainable Growth of TVET System
Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means					
		F	Sig.	t	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Administration link	Equal variances assumes	.908	.344	2.786	69	.007	3.34040	1.19910	.94825	5.73254
	Equal variances not assumed			2.929	16.633	.010	3.34040	1.14057	.92994	5.75085

The data presented in Table 4 indicates that there was no significant disconnect in the mean rating of responses of the worlds of employers

and the training institutions of TVET on the administration link strategies that should exist in collaboration with schools and industries for sustainable growth of TVET system. Since their significance level was 0.344 which is more than 0.005 level of significant difference was not rejected for the cluster items.

Discussion of Findings

The result of the analysis of the industrial practice policy as shown in Table 1 revealed that Training station in schools must be an exact replica of the world of work, increasing investment in technical education diversification policy of funding sources, Develop and enhance team building skills and interpersonal skills among various groups in technical colleges, Follow established procedures for group participation in policy delivery. The findings are supported by the findings of Lai (2011), which state` that collaborative learning could be in many forms, face to face, computer mediated (computer supported collaborative learning), joint or labour divide through the industrial activities, and that each form of collaborative learning is simply a mutual engagement of participants in a coordinated effort to solve a problem together. Similarly, Jose, Irmgardand Richard (2010) state that industrial policies need to be designed with a view to fostering structural transformation patterns that have the potential to accelerate the generation of not just more jobs, but also more productive and better jobs.

The result of the analysis of administrative link strategies as shown in Table 2 revealed that Setting up of industrial committee members of which should comprise of representative of technical college teachers, industrial training managers, and ministryof education, labour and trade unions, There is need to estimate the job placement rates of TVET graduates, Setting up of technical committee for proper implementation of school-industry relations, members which should comprise of industrial training managers and National Board for Technical Education. The findings are supported by the findings of Aquinas (2007) which state that administrative link is a function of a special body in an organization, which supervises the line of activity of all the elements of that organization, keeps within allowable limits the digression from the set goals by both the organization as a whole, and its parts.

Conclusion

What is clear however is that in today's world, an effective TVET system cannot be built if there is a chasm between education and the world of work. There is really only one successful way forward in TVET and that is the partnership of TVET institutions and industry. There is a huge potential in this collaboration and the benefits cut both ways. The only way success can be achieved in this collaboration is for industries to take the lead; they will make it happen faster if they become the champion for these closer collaborations. Policy activities of school-industry cannot be marginalized in this socio-economic and technological era as such collaboration cannot be separated from the broader concepts of national development, manpower, requirements, industrialization, technology acquisition, and research. The best academic institutions can do is encourage policy initiatives of school-industry collaboration for sustainable development in Nigeria TVET system by looking for champions in industry who would be committed to making this succeed.

Recommendations

1. There should be laydown industrial practice policy which ought to be followed by training institution of TVET in collaboration with industries towards skill acquisition for sustainable development of TVET system.

2. There should be revaluing in the policy initiatives of school-industry collaboration for sustainable development of TVET system in Nigeria.

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