

Innovations

Developing a Best Practice through Synergy between Technical Vocational Education and Training and Local Technologies for Sustainable National Security

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Abstract: The interest of the researcher is to develop a best practice through Synergy between Technical, Vocational, Education and Training and Local Technologies for Sustainable National Security. Four research questions were raised for the study while a descriptive research design was adopted for the study to elicit information, opinions and feelings of the respondents. The population of the study comprised of two hundred and fifty (250) institutors, local technologies and lecturers obtained from secondary schools, Technical Colleges and Colleges of Education in the state where TVTE subjects and courses are offered for teaching. However, fifty (50) respondents were used for pilot study which was not parts of the selected population using a balloting technique. The instrument for data collection was questionnaire tagged: Developing a best practice through Synergy between Technical Vocational Education and Training and Local Technologies for Sustainable National Security Questionnaire (DBPTSBTVETLTQ) using four adopted ratings scale of Strong Agree (SA) =4 Agree (A) =3, Disagree (D) =2 and Strongly Disagree (SD) =1. The distribution of instrument was made through the help of a researcher's assistants. The questionnaire was validated by three experts, two from measurement and evaluation and one from technical Education department of Emmanuel Alayande College of Education, Oyo. Validity of face was used for the study. A reliability coefficient of 0.87 was obtained using Pearson Moment Correlation Coefficient on the instrument after test and retest conducted as a pilot in Ogun State indicating that the instrument is reliable. Mean of equal or greater than (\geq) of (2.50 - 5.0 to 1) or equal or less than (\leq) of (2.49 - 2.40 to 1) were adjusted alongside with percentages of response were used to indicate relative agreement or disagreement with the underlying statements as a bench mark for Agreed or Disagreed on the decision table However, the discussion of findings study, conclusion and recommendations were made base on the research findings study outcome that there should be synergy between Technical Vocational Education Training and Local Technologies in order to equip and prepare them for future challenges for a best practice and sustainable National security and also there should be assistance from Government, Communities, Industries, Labour- Union and Non-Government Organization for providing funds to purchase modern equipment and machines for effective synergy and a best practice between TVET and Local Technologies so as to be for self-reliance and for the improvement of our graduates to fit for the use of industries.

Key Words: Development, Synergy, Sustainable, Technical Vocational Education Training, Local Technologies and Nation Security.

Introduction

Nigeria is a Nation with highly populated people, giant of Africa and intellectual of highly reputable scholars, yet could not address many insecurity challenges such as unemployment, poverty, hungers, corruption, thuggery and all social vices which were ravaging the country and could not even allow peace and progress to reign in the society, community and Nation as whole. Technical Vocational, Education and Training (TVET) supposed to be in a position to address the issues of sustainable National security. TVET is designed and expected to increase the level of skills through further training and retraining, providing opportunities for discovering of talents, developing the individual and potentials for the world of work. Therefore, TVET according to Oziengbe (2019) is described as a broadening effect, which motivates learners to be morpppe exploratory, realize their capability and develop their potentials for success in the workplace.

Also, Odoi and Abdulkarim (2010) agree that TVET is that aspect of programme described to prepare individuals through formal training with skills for general survival, leadership and work as productive citizen to provide technology and sustainable econpomic development of the individual and society at large as it is also described in Federal Republic of Nigeria (FRN,2013) and supported by UNESCO (2011)to the type of education which was intended to improve upon for the Nation workforce through the training and retraining of graduates as technician, artisan and, foreman in areas such as: Electrical/Electronics, Auto mechanics, Building work, wood work, metal work and others. In view of this development, it is deeply realized that a handful of work or not engage in doing something would involve in doing evil as “an idle hand is a workshop of devil”.

This is buttressed by Oke Adenle, and Shobowale (2010) claimed that TVET is the aspect of education which exposes the learners to acquire demonstrable skills that could be transformed in to economic benefits and ensure security. National security is defined according to Afasor (2013) is the ability of states to wipe off all forms of threat to the survival and sustenance of a state and its people as well as the ability of a state to protect its legitimate interest with all measures including war. The present threat to National security are Niger Delta Kidnapping and the Northern Boko Haram and Southern militant crisis needs to be addressed by the sustainable synergy between TVET and local technologies for developing a best practice if it's really put into practice and workable for the exorbitant youths. LTs are the work of artisans who have no knowledge of formal education to acquire practical skills but through informal education acquired that lasted for four five years of apprenticeship.

The trades acquired enable the graduates to have freedom in their areas of endeavour and would use as experience to earn a living while TVET are those that have acquired formal education with in adequate practical skills would improve to enable them perform or function maximally however, the needs for developing a best practice for

synergy between TVET and LT is required. Consequence upon this, Synergy is often used interchangeably with collaboration or partnership which involves co-operation, work or act together between people or organizations in the public or private sector for mutual benefit. The partners have to agree in setting up and manage a business outfit with the sole aim of making profits, having common interest, objectives and goals. (Ande, 2012) while development of a best practice is the process of producing a draft framework and also determining its suitability characteristics to enable the needs of the partners actualized particularly between TVET and LT management staff in this research study and for which the synergy of a best practice is to be developed (Victorian Framework, 2009).

Statement of the Problem

Many Nigeria Educations particularly in engineering and technology training acquired through the various higher institutions appear not to be adequately equipping the graduates with all necessary skills required by the society, industries, to be self-reliance and employer of labour in order to ensure security, The cause of this however might be as a result of not equipping enough the workshops with all necessary instructional facilities and material that would be a cushion effects towards graduates kills development needed by the society and to ensure guaranteeing their confident of performance. Even though, the so call LTs available are short of modern equipment and lacking technological methods of improving the quality of the production, this might also be as a result of not acquiring and possessing basic educational background for the improvement with recent innovation in ensuring for National Security.

In addition, the practical skills obtained from various higher institutions seems not to be enough in meeting the modern challenges as there are not enough practical time scheduled to practice, couple with epileptics supply of electricity even though the availabilities of sophisticated tools, equipment and machines are outdated for the use of practical and where there are, the equipment, tools and machines could not go round during practical exercise for the students to participate fully and acquire skills in the schools' workshops. Also, according to Islam and Mia (2007) posited that both formal and non-formal TVET lacked effective links between training and the world of work. Therefore, there is dare need for developing a best practice through synergy between TVET and LTs in order to ensure better performance and National Security in the Nation.

Purpose of the Study

The main purpose of the study is to developing a best practice through Synergy between Technical Vocational Education and Training {TVET} and Local Technologies for National Security.

The specific purpose are to:

- Identify the areas where the TVET and LTs could work together or synergizing to develop a best practice for National security.
- State the ways by which LTs and TVET could work together or synergizing to develop a best practice for National Security.
- Provide the Instructional facilities and materials required for synergy by TVET and LTs in facilitating of working together or synergizing to develop a best practice for National Security.
- Investigate the benefits that could be obtained from being work together or synergizing to develop a best practice for National Security.

Research Questions

- Four research questions were raised for the study based on the purpose of the study above as follows:
- What are the areas where the TVET and LTs could work together or harness to develop a best practice for National Security?
- What are the ways by which TVET and LTs could work together to develop a best practice for National Security?
- Are there modern Instructional facilities and materials required for TVET and LTs that would enable them work together or synergy to develop a best practice for National Security?
- What are the benefits that could be obtained by TVET and LTs from working together to develop a best practice for National Security?

Significance of the Study

The study would be of highly benefit to graduates of TVET, Local Technologist, Educational researchers, curriculum developers, the three tiers of government (Federal, State and local government) and the citizenries. The graduates of TVET would acquire more experience and practical skills development by tying to synergy with LTs. The formation of business partnership would increase production materials in modern firm, new idea would be introduced and inculcated more innovation creativity, discoveries and exploiting of potentials resources would be enhanced.

LTs could use the opportunity to improve their knowledge through workshop, seminar and conference organized to improve their education background which could as well improve their quality of production. Educational researchers would use the research work to improve the existing one and in trying this, developing economic would be improved for securing self-reliance, employability and National Security guarantee. The curriculum developer would improve the curriculum contents having seen the benefit in the Nation derived from and it would continually improve upon.

The Federal, State and Local Government would have a sigh of relief in terms employment seekers and more people would be encouraged to establish and participate in the type of scheme for National Security. The citizenries would be productive, shun off all evil vices that can terminate good personality of individual and the Nation at large.

Scope of the Study

The scope of the study covered developing a best practice through synergy between TVET and LTs for sustainable National Security within the limit of the TVET contents as stipulated by the Federal Republic of Nigeria, National Policy on Education, 2013 for any graduates of Technical Education (TE) that must have acquired for practical skills. The research work was carried out in all the States of South West of Nigeria.

Methodology

A descriptive research design was adopted for the study to elicit for the information opinions and feelings of the respondents (Osula, 2005) The population sampled for the study comprised of two hundred and fifty (250) teachers, institutors and lecturers obtained from secondary schools, Technical Colleges and Colleges of Education in the state where TVTE subjects and courses are offered and taught There was no sampling for the study because of the small size of respondents. However, fifty (50) respondents were used for pilot study in Ogun State which was not part of the selected population using a balloting technique. Four research questions were raised for the study.

The instrument used to collect the data is questionnaire tagged: Developing a best Practice through Synergy between Technical Vocational Education and Training and Local Technologies for Sustainable National Security (DBPTSTVETLTSNS) using items statement on the basis of four adopted rating scale of Strongly Agree (SA) =4 Agree (A) =3, Disagree (D) =2 and Strongly Disagree (SD) =1. The distribution was made through the help of a researcher's assistants. The questionnaire was validated by three experts, two from measurement and evaluation and one from technical Education department of Emmanuel Alayande College of Education, Oyo. Validity of face and content was used for the study. A reliability coefficient of 0.87 was obtained using Pearson Moment Correlation Coefficient on the instrument after test and retest conducted for the pilot in Ogun State indicating that the instrument is reliable. Mean of equal or greater than (\geq) of (2.50 - 5.0 to 1) or equal or less than (\leq) of (2.49 – 2.40 to 1) were adjusted alongside with percentages of response were used to indicate relative agreement or disagreement with the underlying statements as a bench mark for Agreed or Disagreed on the decision table.

Discussion of Findings Study

Findings of the study, conclusion and recommendations were made among which are: There should be synergy between TVET and LTs in order to equip and prepare them for future challenges and ensure a best practice and sustainable National security. There should be assistance from Government, Communities, Industries, Labour- Union and Non-Government Organization for providing funds to purchase modern equipment and machines for effective synergy and ensure a best practice between TVET and LTs for self-reliance and improvement of our graduates to fit for the use of industries.

Results and Discussions

The findings of the study are presented in accordance with the research questions as following:

Research Question 1: what are the areas where TVET and LTs should work together or harmonize to develop a best practice for National security?

Table 1: Response by the respondents on the areas where TVET and LTs should work together or harmonize to develop a best practice for National security

S/N	Item Statements	SA (%)	A (%)	D (%)	SD (%)	Mean	Decision
11	Working together of TVET and LTs on the area of practical skills aspect of maintenance and repairs to ensure a best practice for National Security of job performance.	105 (42%)	80 (32%)	35 (14%)	40 (16%)	2.76	Agreed
2	Synergizing of TVET and LTs on theoretical aspect of repairs and maintenance to ensure a best practice for National Security of job performance.	65 (26%)	65 (26%)	80 (32%)	50 (20%)	2.35	Disagreed
3	Synergizing of TVET and LTs on the area of both practical skills and theory of repairs and maintenance to ensure a	90 (36%)	90 (36%)	45 (18%)	25 (10%)	2.65	Agreed

	best practice for National Security job performance.						
4	Working together of TVET and LTs on the area of training institutes for repairs and maintenance to ensure a best practice for National Security assurance	90 (36%)	90 (36%)	45 (18%)	25 (10%)	2.65	Agreed
5	Synergizing of TVET and LTs on the area of organizing workshops, seminars and conferences to ensure a best practice for National Security for job performance.	60 (24%)	100 (40%)	40 (16%)	30 (12%)	2.70	Agreed

Key Words: S A= Strongly Agree, A= Agree, D= Disagree, SD= Strongly Disagree

Table results shows that item 1,3,4 and 5 are in agreement with the statement indicating that working together of TVET and LTs graduates with respect to the areas of synergizing that can enhance sustenance TVET and LTs for National Security but item disagree because working together in theory cannot enhance sustenance.

Research Question 2: what are the ways by which TVET and LTs can work together to develop a best practice for National Security?

Table 2: Response by the respondents to the ways by which TVET and LTs could work together and develop a best practice for National Security

S/N	Item Statements	SA (%)	A (%)	D (%)	SD (%)	Mean	Decision
6	Work Working together by TVET and LTs graduates on full time training to ensure a best practice for National Security job performances	80 (32%)	90 (36%)	50 (20%)	30 (12%)	2.90	Agreed
7	Working together by TVET and LTs on part time training to ensure a best practice for National Security	90 (36%)	80 (32%)	45 (18%)	35 (14%)	2.30	Disagreed

	job performance						
8	Work Working together of TVET and LTs graduate promote to share from their skills expert experience to ensure a best practice for national Security for job performance.	100 (40%)	90 (36%)	40 (16%)	20 (8%)	3.50	Agreed
9	Work Working together of TVET and LTs graduate promote in the area of their specialization to ensures a best practice for National Security for job performance	105 (42%)	95 (38%)	30 (12%)	20 (8%)	3.45	Agreed
10	Work Working together of TVET and LTs graduates on partnership formation formats to ensure best practices on performance for National Security.	95 (38%)	80 (32%)	50 (20%)	25 (25%)	2.50	Agreed

Key Words: S A= Strongly Agree, A= Agree, D= Disagree, SD= Strongly Disagree

Table 2 above shows that item 6, 8, 9 responses to the statements are in agreement with regards to research question. This implies that the ways of working together by which TVET and LTs graduates would enhance sustenance and ensures National security but item 7 fails to comply with the statement and do not support sustenance except working together involving on full time.

Research Question 3: Are there modern Instructional facilities and materials required for TVET and LTs that would enable them work together or synergy to develop a best practice for National Security?

Table3: Responses of respondents in modern infrastructural facilities for TVET and LTs required for TVET and LTs to enable them work together and develop a best practice for National Security

S/N	Item Statements	SA (%)	A (%)	D (%)	SD (%)	Mean	Decision
11	Provision of modern workshops type to facilitate TVET and LTs working together to ensure best practice for National Security	110 (44%)	90 (36%)	30 (12%)	20 (8%)	2.60	Agreed

12	The equipment available for the use of TVET and LTs are capable of ensuring a best job performance practice for National Security.	150 (60%)	80 (32%)	30 (12%)	40 (16%)	2.40	Agreed
13	The sophisticated machine installed in the workshop are available for TVET and Local Technologies graduates facilities in work together to ensure a best practice on job performance for National Security .	95 (38%)	80 (32%)	45 (18%)	30 (12%)	3.25	Agreed
14	The available tools are adequate enough for the use of TVET and LTs trainers to work with together and ensure a best practice.	40 (16%)	60 (24%)	80 (32%)	70 (28%)	2.45	Agreed
15	The workshops are equipped with standby electricity for the use of TVET and LTs trainers to ensure best practice of work together for National Security	50 (20%)	60 (24%)	90 (36%)	70 (28%)	2.35	Agreed

Key Words: S A= Strongly Agree, A= Agree, D= Disagree, SD= Strongly Disagree

Table above shows all the item statements of the respondents are in good agreement with the research question 3. This implies that modern infrastructural facilities will ensure and facilitating working of TVET and Local Technologies grandaunts together in order to enhance National security.

Research Question 4: what are the benefits that could be obtained by TVET and Local Technologies from working together to develop a best practice for National security?

Table 4: Response of the respondents on the benefits that can be benefitted by TVET and LTs graduates working together to develop a best practice for National security

S/N	Item Statements	SA (%)	A (%)	D (%)	SD (%)	Mean	Decision
16	Working together by TVET and LTs ensure more specialization on job to a best practice for National Security.	100 (40%)	80 (32%)	40 (16%)	30 (12%)	3.00	Agreed
17	Working together by TVET and LTs graduates will ensure a best practice on self-reliance on job for National Security.	105 (42%)	90 (36%)	45 (18%)	30 (12%)	3.60	Agreed
18	Working together by TVET and LTs graduates facilitates partnership in business formation to ensure a best practice for Nation Security.	90 (36%)	100 (40%)	30 (12%)	40 (16%)	3.70	Agreed
	Working together by TVET and LTs graduates ensures a best practice on innovative and creativity for National Security.	85 (34%)	100 (40%)	35 (14%)	40 (16%)	3.65	Agreed
20	Working together by TVET and LTs graduates will improve the economy growth has a best practice for National	90 (36%)	110 (44%)	25 (10%)	25 (10%)	3.60	Agreed

	security.						
21	Workings together by TVET and LTs graduates improve individual economic growth as a best practice for National Security.	100 (40%)	95 (38%)	30 (12%)	25 (10%)	3.50	Agreed
22	Working together by TVET and LTs graduates shun off social evil vices in the communities as a best practice for National Security.	65 (26%)	95 (38%)	35 (14%)	35 (14%)	3.40	Agreed
23	Working together by TVET and LTs graduates will provide employment for others as a best practice for National Security.	95 (38%)	90 (36%)	30 (12%)	25 (10%)	3.55	Agreed
24	Working together by TVET and LTs graduates serve as basic for technologies development as a best practice for National Security.	100 (40%)	80 (32%)	35 (14%)	35 (14%)	3.60	Agreed
25	Working together by TVET and LTs graduates reduce foreign expenses incused and less dependent on other nations as a best practice for National Security.	85 (34%)	90 (36%)	40 (16%)	35 (14%)	2.80	Agreed

Key Words: S A= Strongly Agree, A= Agree, D= Disagree, SD= Strongly Disagree

Table 4 shows that all the items 16-25 are in good agreement with the response of the respondents which means that a lot would be of highly benefitted from the working together of TVET and local technologies grandaunts that will result to the enhancement of sustenance and National Security.

Discussion of Findings Study

The finding reveals that mutual integration of TVET and LTs training of TVET would be of immense benefit to ensure practical skills and improve in the standard performance of both trainees and students apart from leading the country into technology development if only the traditional methods were forsaken, imbibed integrated with modern method in doing practical skills as Olorunfemi and Ashaolu (2008) reiterated that the quality of instruction acquired from their various institution result to good performances.

Another finding reveals that the timeframe of committing into the task involved in synergizing of TVET and LTs is a serious of s issue as much would be gained and acquired if only it is on full time basis with the assistance of using modern tools, equipment, machines and other modern instructional facilities and materials are put in place as Niche(2010) proved in his research that insufficient training equipment leads to trainee and ensuring overcrowding during practical lessons with most of the students only to be observed that the demonstration are not having the chances to get some hands on desk for practical.

Conclusion

Lack of modern tool, equipment and machines couple with traditional methods and instructions of doing things are causing or hampering the development TVET in Nigeria not to enable the graduates to be self-reliance and have no job security. It has also been observed that inability of TVET and LTs to come together and rub minds could not allow sharing practical experience and ensuring under-developing of technological Nation.

Recommendations

Based on the findings of the study, the following recommendations are made:

- There should be synergy between TVET and LTs in order to equip and prepare them for future challenges and ensure a best practice and sustainable National security.
- There should be assistance from Government, Communities, Industries, Labour Union and Non-Government Organization for providing funds to purchase modern equipment and machines for effective synergy and ensure a best practice between TVET and LTs for self-reliance and improvement of our graduates to fit for the use of industries.

- Sharing information on the changing trends in LTs practices and how these changes could be incorporated into the curriculum of the school for a best practice and sustainable National security.
- TEVT institutions should be charged with oversight responsibilities by putting structure and policies that would facilitate TVET and LTs links best practice.
- Organizing of Seminars, Workshops, Conferences, and Exhibitions to showcase locally made production that would be a tremendous for the improvement of both TVET and LTs on a best practice for sustainable National security.

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