

Bridging TVET Psychomotor Skills Gap in Tertiary Institutions for Self-Reliance and Economic Recovery

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Abstract— The purpose of this study was to examine how Technical Vocational Education and Training (TVET) institutions can be a tool to bridge the psychomotor skills gap of students for self-reliance and economic recovery. Two research questions guided the study and a survey research design was used. The population of the study was 87 TVET lecturers from six tertiary institutions owned by the government in South-South Nigeria. Random sampling technique using balloting was used to select 60 TVET educators. The instrument for data collection was a questionnaire developed by the researchers and was face validated by three TVET lecturers. The reliability coefficient of the instrument was 0.87 using the Cronbach Alpha technique. Data collected were analysed using simple frequency count and percentage, and any response that has the highest frequency and percentage was recorded as the overall remark. The study revealed that industries and institutions partnerships will help to bridge the psychomotor skills gap of TVET students in Nigeria through workplace partnership like resource sharing, staff training and the establishment of TVET psychomotor skills acquisition and exhibition centres amongst others. Based on the findings of this study, it was recommended among others that individuals, industries, government and institutions should establish partnership that will help to enhance the psychomotor skills of TVET students in Nigeria.

Index Terms— Psychomotor Skills Gap, Partnerships, Students, Technical Vocational Education and Training (TVET).

I. INTRODUCTION

Technical Vocational Education and Training (TVET) has always been a notable force of development in human existence. TVET is significance in every facet of life ranging from agriculture, transportation, construction, production, and modernization among others (Mkpughe&Igberadja, 2016). According to Nuri (2013), the system of imparting knowledge to Technical Vocational Education and Training (TVET) students are the general education system. Nuri further stated that the general education which aims to enhance the general proficiency, is mostly theory based and does not prepare the learner for any specific job or occupation. Skilled based education on the other hand, is designed to develop competencies suited to identify

occupation(s). According to Agrawal (2012), TVET is a study on programs that skilfully prepare individual for effective performance on psychomotor tasks; it involves the acquisition of skills and competencies that can help individuals to function productively in industrial and commercial occupations. TVET prepares students for the world of work, because it is a skill oriented discipline which is aimed at inculcating vocational technical skills to its recipients. Thus, TVET has emerged as one of the most effective human resource development strategies that Nigeria and other African countries need to embrace so as to train and modernize the technical workforce for industrialization and national development (Pagtakh& Rock, 2002). TVET can be regarded as the most important bridge to the future and a powerful instrument of empowerment. According to Sodipo (2014), the present educational system, with its emphasis on TVET, if firmly rooted in its implementation can be perceived as the most potent instrument that can be used to nurture skills that are necessary for agricultural, industrial, commercial and economic recovery and thus builds a self-reliant nation. TVET would enable the recipients to be better, more useful and more productive citizens of the nation, it would bring about the development changes as envisaged in the National Policy on Education (FRN, 2013) which emphasized "the equipment of individual with appropriate skills, abilities and competencies as necessary for them to live in and contribute to the development of the society in this ever global world.

It is pertinent to mention here that the change from liberal to vocational technical education was due to felt-need as a result of awareness and reports by various Commissions like the Phelps-stokes and Ashby, (Sadiq, 2001). The overall aim was to make education relevant and useful to the people. Nigerians are talented people who are good at policy formulation. The country has for long witnessed the formulation of laudable policies affecting the lives of her citizens. It is rather sad to note that most of the policies were either not implemented or poorly implemented due to the problems inherent in the policy itself or in our funding system as a nation (Sadiq, 2001). Because of the fast changing requirements and demand for manpower on newer trades and higher levels of skills, a large number of industries are unable to recruit appropriately trained skilled workforce required in these industries. This results in many of the TVET students remaining unemployed (Aftab&Mohd, 2012). The major reason of this employability gap is the inability of the TVET institutions to adapt or update their curricula and training

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programs according to the need and demand of the job markets. To improve upon the situation, TVET institutes need to establish strong linkages and partnerships with the industry sectors to know their requirements and design the training curricula accordingly (Aftab&Mohd, 2012).

According to Sodipo (2014), a psychomotor skill gap is a significant gap between the needed skills and the current capabilities of the workforce in an organization. Elechi (2013) stated that psychomotor skills gap exist at the point when the organization can no longer grow or remain competitive in its industry because its employees do not have the right skills to help drive economy results or support its strategies and goals. According to Adetokunbo (2009), the skill gaps are noticeable in five major areas. These are:

1. Basic skills: These include proficiency in reading, writing, simple calculations, communications and human relations.
2. TVET skills: These are capabilities in manipulating engines, machines, equipment, constructions, computers, etc.
3. Professional skills: These are required skills in fields like law, medicine, marketing, teaching, nursing, surveying, architecture, etc.
4. Management/leaderships skills: These cover areas like supervision, team-building, goal- setting, planning, motivation, decision making, delegation, ethical judgment, etc.
5. Emotional intelligence skills: These are innate capabilities. They manifest as self- awareness, self-discipline, persistence, sympathy, perseverance, intuition, etc.

Adetokunbo (2009) further posited that bridging the skill gaps is not merely improving workers' competence in core fields like technology, engineering, science and mathematics, but there are gaps too in non-technical areas such as leadership, management and communication. Education with relevant syllabuses and training in specific areas play crucial roles in achieving rapid changes in updating technical and engineering skills. Equally important to the ability to innovate, collaborate and compete are the non-technical skills. These manifest incompetence in people-management, human relations, language proficiency etc. Good character traits such as honesty, integrity, hard work, love, empathy, justice and fairness are intrinsic valuable skills that contribute immensely to success. These skills oftentimes sustain the operation of the organization where other technical skills are inadequate.

According to Olaitan (2000), partnerships remain the best option to address the psychomotor skills gap of TVET students in Nigeria. Olaitan further stated that partnerships is an arrangement between TVET institutions and an industry to assist learners developed functional psychomotor skills for the world of work and give them the opportunity of matching theoretical learning with practice. In order to remain competitive in the world market, corporations should have highly skilled employees who can keep the enterprise economically viable in a global economy. Nuri (2013) posited that TVET institutions should use a wide range of methods

including joint venture with industry and summer courses to linking between the learning and industry. According to Callan and Ashworth (2004), the purpose of working with industry is to develop the TVET curriculum. El- Raghy (2009) stated that a good relationship between the TVET institutions and industry facilitates the placement of students for training and provide case studies for enriching the delivery of the curriculum. Callan and Ashworth (2004) stated that industry partners believed that the strength of their relationships with training institutions is central to creating skills and knowledge for solution of the problems.

Since technology advances in today's workplace, there is an increasing demand for well trained entry level workers. Improving partnerships between industries and vocational technical education institutions in Nigeria could be a help to address the problem of shortage of skilled manpower; psychomotor skill mismatch and the psychomotor skills gaps that exist between the labour market demand and supply. Buttressing the relevance of partnerships between industries and vocational technical institutions, Adetokunbo (2009) recommended that the need to institutionalize Entrepreneurship Development Programme (EDP) and TVET in the educational curricula is also imperative. These subjects should be included among the contents of the compulsory general studies programme of all TVET institutions. Adetokunbo, further suggested an outline for a framework for fostering the partnership for interaction between TVET institutions and employers. This no doubt will entail an integrated strategy.

In framing an innovative curricular relevant to employers' need, TVET institutions must function in the dynamics of modern trends, including ICT, globalization and technological changes. Elechi (2013) stated that there is the need for partnership in the successful implementation of entrepreneurial education. Elechi further posited that partnership with the National Directorate of Employment and neighbouring tertiary institutions to share resources and analyse information in order to effectively communicate and collaborate with other students of diverse abilities, skills and socioeconomic background is important.

II. STATEMENT OF PROBLEM

The level of psychomotor skills possessed by TVET students to become self-employed and enhance economic recovery has been a worrisome issue in Nigeria. Industries believed that these students do not possess skills for economic recovery, thereby making these students to be unemployed. Nigeria's unemployment rate rose from 12.1% in the first quarter to 13.3% at the second quarter to 13.9% in the third quarter of 2016 (NBS, 2016). It further pointed out that from 2006 to 2016, Nigeria's unemployment rate averaged 9.52 which shows that there were a total of 26.06 million persons in the Nigerian labour force in second quarter of 2016 that were either unemployed or underemployed compared to 24.5 million in the first quarter of 2016. Research carried out by the Ministry of Youth Development in 2012 pointed out that there are 68 million unemployed youths in Nigeria (Maaji & Hassan, 2012). The high rate of unemployment in Nigeria

affects both those who went to school and those who do not have the opportunity to go to school. This unemployment situation is as a result of the lack of skills by unemployed Nigerians. Therefore, to address these problems of lack of psychomotor skills by TVET students for economic recovery, there is need to find ways that will be used, which is the focus of this study.

Purpose of the Study

The study investigated the strategies that can bridge technical vocational education students psychomotor skills gap in tertiary institutions in South South Nigeria.

Specifically, the study sought to determine:

1. How partnerships between TVET institutions and industries help to bridge the skills gap of TVET students in Nigeria.
2. How partnerships between TVET institutions and industries help to tackle the economic recovery in Nigeria.

Research Questions

The following research questions guided the study:

1. How can partnerships between TVET institutions and industries help to bridge the psychomotor skills gap of TVET students in Nigeria?
2. How can partnerships between TVET institutions and industries help to tackle the economic recovery in Nigeria?

III. METHODOLOGY

The study was carried out in (3) Universities and (3) Colleges of Education own by government in South-South Nigeria (Akwa Ibom State College of Education, AfahaNsit, Federal College of Education, Omoku, Rivers State, Federal Colleges of Education, Asaba, Delta State, University of Uyo, Delta State University, Abraka and Rivers State University of Science and Technology.

The study employed survey research design. Nworgu (2006) noted that it is a design approach which aims at collecting data and describing them in a systematic manner, the characteristics features or facts about a given population. This design is used as a means of effecting clearly and properly understanding of the research findings, since it sought to ascertain the improvement of creativity in TVET.

The population of this study was 87 TVET lecturers in the

Department of Vocational Education drawn from six tertiary institutions in South-South, Nigeria.

Simple random sampling technique using balloting method was used to select 60 TVET lecturers which represent 68.4% of the entire population.

The instrument for data collection was a 10-item questionnaire titled ‘Bridging Technical Vocational Education and Training Students Psychomotor Skills Gap Questionnaire’ (BTVEGPSPQ) developed by the researchers. The questionnaire had two parts A and B, part A was on the respondent’s demographic data, while part B had two sections 1 and 2. Section 1 was on how to bridge the psychomotor skills gap while section 2 was on how to tackle unemployment of TVET institutions students. Section 1 and 2 had 6 and 4 items statement respectively. The questionnaire was on a 4-point rating scale of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD). The respondents indicated their level of agreement by ticking (√) on the rating scale based. The scale was weighted according to the percentage/frequency of respondents.

The questionnaire was faced validated by three (3) TVET lecturers from University of Calabar. Corrections and possible suggestions were offered by the experts after adequate scrutiny of each item. This was to ensure that the instrument measured the intended attributes.

Using test retest method, the questionnaire was administered twice in two weeks interval to 10 TVET lecturers from Cross Rivers State University of Science and Technology to ascertain the reliability of the instrument, Cronbach Alpha technique was used to analyse the data collected which yielded a reliability coefficient of 0.87.

Data were collected by the researchers, on the spot, through the assistance of four research assistants, recording a 100 per-cent return rate. Data collected were analysed using simple frequency count and percentage, therefore, the response that had the highest frequency and percentage was recorded as the overall remark.

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IV. RESULTS AND DATA ANALYSIS

Research Question 1: How can partnerships between TVET institutions and industries help to bridge the psychomotor skills gap of TVET students in Nigeria?

Table 1: TVET lecturers’ response on bridging the psychomotor skills gap of TVET students through TVET institutions-industry partnerships N=60

S/ N	Item Statement: The following are ways of bridging the psychomotor skills gap of TVET students in Nigeria through Partnerships between TVET institutions and industries:	Response				Overall Remark
		SA F (%)	A F (%)	D F (%)	SD F (%)	
1.	Workplace partnerships such as SIWES.	30(50.0)	18(30.0)	7(11.7)	5(8.3)	Strongly Agreed
2.	Resource sharing such as laboratory, workshops, and personnel.	42(70.0)	13(21.7)	4(6.7)	1(1.6)	Strongly Agreed

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3.	Staff training and development programme.	28(46.6)	22(36.7)	7(11.7)	3(5.0)	Strongly Agreed
4.	Joint review/ formulation of curriculum.	32(53.0)	22(36.7)	4(6.7)	2(3.33)	Strongly Agreed
5.	Joint assessment of student's skills by industries and TVET institutions.	19(31.7)	32(53.0)	7(11.7)	2(3.33)	Agreed
6.	Joint certification of students by industries and TVET institutions.	22(36.7)	27(45.0)	10(16.6)	1(1.7)	Agreed

***Note:** F= Frequency & %= Percentage

The data presented in Table 1 shows the respondents opinion on how partnerships between TVET institutions and industries can help to bridge the skills gap of TVET students in Nigeria. The respondents strongly agreed that workplace partnerships such as SIWES, resource sharing such as laboratory, workshops, and personnel, Staff training and development programme, Joint review/ formulation of

curriculum while others agreed that Joint assessment of student's skills by industries and TVET institutions, Joint certification of students by industries and TVET institutions are measures that can help to bridge the skills gap of TVET students in Nigeria.

Research Question 2: How can partnerships between TVET institutions and industries help to tackle the economic recovery in Nigeria?

Table 2: TVET lecturers' response on tackling the economic recovery in Nigeria N=60

S/ N	Item Statement: The following are ways of tackling the economic recovery in Nigeria	Response				Overall Remark
		SA F (%)	A F (%)	D F (%)	SD F (%)	
7.	Compulsory internship in industries for 2 years before graduation	35(58.4)	18(30.0)	5(8.3)	2(3.3)	Strongly Agreed
8.	Entrepreneurship training and development by industries	31(51.7)	24(40.0)	5(8.3)	0(0.0)	Strongly Agreed
9.	Soft loans for VTE students by industries	21(35.0)	29(48.3)	6(10.0)	4(6.67)	Agreed
10.	Establishment of vocational technical skills exhibition centres by industries and TVET institutions	27(45.0)	23(38.3)	8(13.3)	2(3.3)	Strongly Agreed

***Note:** F= Frequency & %= Percentage

The data presented in Table 2 shows the respondents opinion how can partnerships between TVET institutions and industries help to tackle the economic recovery in Nigeria. The respondents strongly agreed that compulsory internship in industries for 2 years before graduation, entrepreneurship training and development by industries and establishment of vocational technical skills exhibition centres by industries and TVET institutions are measures that can help to tackle the economic recovery in Nigeria.

V. DISCUSSION OF FINDINGS

Data analysis for research question 1 shows that high percentage of the respondents strongly agreed that industrial partnerships such as SIWES, resource sharing such as laboratory, workshops and personnel, Staff training and development programme, Joint review/ formulation of curriculum, and others agreed that Joint assessment of students skills by industries and TVET institutions, and Joint certification of students by industries and TVET institutions are ways of bridging the psychomotor skills gap of TVET students in Nigeria. The findings is in agreement with the

views of scholars such as Adetokunbo (2009) who suggested an outline for a framework for fostering the partnership for interaction between university and employer and Elechi (2013) who posited that there is the need for partnership in the successful implementation of entrepreneurial education. While some areas of positive interaction between university and employers exist in the forms of training programs, and joint services geared at bridging the skill gaps, what is needed, however is a framework that addresses the chronic psychomotor skilled shortages in the labour market. As well, educational reform is the most important area in which TVET institutions can aid in bridging skill gaps. The rapidly changing needs of employers and the labour market affect curriculum. Adjusting the curriculum to rapidly changing needs of employers and the labour market is therefore very imperative. However, TVET policy design and delivery should be achieved through a new partnership between government, employers, professional associations, industry, and employees. Pagtakhan and Rock (2002), pointed out, in order to make the best use of resources and provide high quality TVET for students, it is essential that the vocational technical education system and the market place work

together clearly. This collaboration should include the directing of resources towards occupational and career preparation where there is the greatest need and opportunity. Also data analysis for research question 2 shows that high percentage of the respondents strongly agreed that Compulsory TVET graduate internship in industries for 2 years before graduation; Entrepreneurship training and development by industries; Immediate employment after graduation by industries; Establishment of TVET exhibition centres by industries and TVET institutions and others agreed that giving soft loans for TVET students by industries are ways of tackling the unemployment of TVET institutions students in Nigeria. The findings of this study is in agreement with the findings of Callan and Ashworth (2004) who stated that industries believed that the strength of their relationships with TVET institutions is central to creating skills and knowledge for solution of the problems. According to Callan and Ashworth, the purpose of working with industry is to develop the vocational technical education institutions curriculum. Also, El-Raghy (2009) stated that a good relationship between the TVET institutions and industry facilitates the placement of students for training and provide case studies for enriching the delivery of the curriculum. For table 3 and 4, the hypotheses were considered to be not significant. The implication of the findings is that both the male and female lecturers have the same opinion regarding how partnership can help to bridge psychomotor skills gap of students and how it can help to tackle economic recovery in South-South Nigeria.

VI. CONCLUSION

Based on the findings from this study, it was concluded that both industries and TVET institutions have vital roles to play in bridging the psychomotor skills gap TVET students and in tackling economic recovery in Nigeria. Therefore, adequate synergies such as workplace partnerships like SIWES, resource sharing, staff training programme and the establishment of vocational technical skills exhibition centres should be put in place to enhance the employment chances of and/or self-reliant TVET institutions students. The implication of the findings of this study if properly implemented by government, industries, and TVET institutions will help to produce viable TVET students that will contribute meaningfully to the growth and development of the Nigerian economy, which will be as a result of the impact of the skills and attitude benefited by the recipients through the supposed partnership between industries and TVET institution.

VII. RECOMMENDATIONS

The following recommendations are made based on the findings of this study:

1. Industries, government, and TVET institutions should established partnership that will be used to enhance the competency of VTE students through programme such as workplace partnership, resource sharing, and staff training, joint review of curriculum, SIWES and joint certification of TVET students in Nigeria.

2. Industries, government, and vocational technical education institutions should establish partnership that will enhance national economic recovery and increase employment/or self-reliance chances of VTE students through initiative programmes like: compulsory internship for 2 years, entrepreneurship training/development, soft loans, employment after graduation, and establishment of vocational technical skills exhibition centres.
3. Government should increase its funding of TVET educational and financial institutions that provide on lending to psychomotor skills like NERFUND, TEDFUND, ITF and so on.
4. With the recent emphasis on the need for youth self-employment, the government is equally expected to create the enabling environment that will promote high-technology by ensuring constant power supply in the country, without this the youth will become discouraged and return to idleness.

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