Journal of Centre for Technical Vocational Education, Training and Research (JOCETVETAR) Vol.3 No.2: December 2018

THE ROLE OF STUDENTS INDUSTRIAL WORK EXPERIENCE SCHEME IN BRIDGING THE GAPS IN EDUCATIONAL TRAINING AND SKILLS DEMAND IN NIGERIA.

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Abstract

The study focused on the Role of Students Industrial Work Experience Scheme (SIWES) in bridging the gaps in educational training and skill demands in Nigeria. Two research questions and two null hypotheses were formulated to direct the study. The target population was 2,536 comprising 2, 500 TVET Lecturers from Tertiary Institutions and 36 Chief Executive Officers (CEO) from randomly selected industries. Sample size was 381 statistically determined using Yaro Yamane formula and selected by simple random sampling technique. Structured questionnaire items developed from related literature reviewed and face-validated by three experts were used for data collection. The reliability of the instrument was determined using Cronbach Alpha method and a co-efficient of 0.77 was obtained. Six research assistants helped to distribute and retrieve the copies of the questionnaire by hand at 100% return rate. With the help of Statistical Packages for Social Sciences (SPSS), descriptive statistics were employed to answer the research questions while Independent sample t-test was used to test the null hypotheses at a probability of 0.05. The findings of the study revealed that the TVET institutions and the industries play significant role in bridging the gaps in educational training and skill demands in Nigeria. The role of institutions that could bridge the gaps to include: supervision of SIWES participating students. SIWES placement, prompt release of allowances for staff supervision, timely preparation of SIWES master list, adequate orientation programme for SIWES participating students, and timely submission of ITF documents while industries role in the provision of well-equipped training facilities to SIWES participating students, supervision of SIWES participating students, effective on-the-field evaluation of performances of SIWES students, and feedback role to institutions could help in bridging the gaps between educational training and skills demand in Nigeria. The study advocated synergetic roles between TVET institutions and the industries to bridge the gaps between educational training and skills demand in Nigeria.

Keywords: *Skills Demand, Educational Training, Bridging Gaps, SIWES roles, Nigeria.*

Introduction

As Nigerian industries are rapidly growing especially in the advancement of science and technology, unprecedented demand for better graduates who would fit into the dynamic world of work has been created. Industries often criticize that existing higher education curricula fall short of tackling the practical issues in the industry (Akerejola, 2004). Since the curricula of most institutions lack the needed contents and methodologies in relation to industrial skills need, the educational training that it will dispense would certainly be a ‗round peck in a square hole', resulting to gross mismatch (Okpor and Hassan, 2012).For instance, the industry expects the tertiary institutions to train their future employees with the latest technologies because the academia is at the centre of developing trends (Wodi and Dokubo, 2009). The tertiary institutions, in turn lacked a proper academic programme with the requisite educational facilities suitable for the industries.

The industries are continually broadening while the knowledge domain and training apparatus are increasingly becoming complex. Provision of these highly sophisticated machines and the latest

technologies used in industries for educational training in Nigerian institutions is very expensive and highly challenging to education providers (Oshionebo and Ashang, 2013).According to the authors, the educational facilities in higher education are complex, cost intensive, and of low quality as well as fall short of international standard. The authors noted that it is very demanding to ensure quality and meeting international standards. This could be the reason why it was reported that Nigerian higher institutions are faced with diverse educational facility challenges especially in areas of provision of quality school buildings, classrooms, hostels, staff quarters, workshops, laboratories, ICT centers, e-libraries, health centers, and sports facilities (Uche, Okoli and Ahunanya 2011). Maintenance culture and renewal of dilapidated facilities are other problems facing educational facilities in Nigerian tertiary institutions, as observed by the researchers. This has created gaps between higher education training and the supply of skills demanded by the industries (Usman and Tasmin, 2015; Ugwuanyi and Ezema, 2010).

A skill gaps refer to the shortage of graduates with required skills for effective performance in industries. It is the difference between what is required or expected by industries and what graduates actually possess or acquired during training in educational institutions. Bridging the gaps means addressing the mismatch to create balance between the demand for employable graduates or well-trained graduates from industries (Ogundipe, Ogunde, Olaniran, Ajao and Ogunbayo, 2018). This would require the tertiary institutions to equip graduates with the right skills for industries, provide favourable learning environment and industry-oriented programmes that the labour market requires (Ayonmike and Okeke, 2016). Aper cited in Ukwueze (2011) and Oluyomibo (2016) stated that the important role of developing better curriculum in higher education programme especially in tertiary institutions is to significantly bridge the gaps between the changing technology and industrial needs. Educational

training is the development of individuals with the right skills and specific abilities that meet the skills demand of the relevant occupation or industry; while skills demand simply refers to the requisition of needed graduates with the right attitudes and abilities by the relevant industries (Wapmuk, 2011; Mkpughe and Igberadja, 2016).

The essence of educational programmes in higher education is to supply quality graduates that meet industrial skills demand (Elechi, 2013). Cole in Ukwueze (2011) agreed that curricula are expected to be developed with the objectives of producing skilled and employable graduates while Oyeniyi (2011) stated that employability of graduates rests in the knowledge and skills acquired through training.

These programmes must be developed and implemented towards exposing learners to work experiences to ensure that upon graduation, they are properly baked for the industries (Sodipo, 2014). Usman and Tasmin (2015) and Oyeniyi (2011) noted that one of the work experience programmes that play a vital role in addressing the mismatch or gaps between industrial skills demand and educational training among academic institutions is Students Industrial Work Experience Scheme (SIWES), which was borne out of the growing public demand and legislative expectations for accountability in the past few decades. SIWES is a skill development programme designed to prepare students of Nigerian tertiary institutions for transition from the school environment to work (Usman and Tasmin 2015; Ayonmike and Okeke, 2016; Umar and Cyril, 2012; Ikechukwu, 2016). Work experience is an educational programme in which students participate in work activities while attending school to equip them for post-graduation career success (Oyedele in Ukwueze 2011; Oyeniyi, 2011).

Post-graduation career success, however, has typically been defined in terms of the likelihood of gaining full-time decent job offer after graduation (Rizwan, Sarosh and Syed, 2011; Ugwuanyi and Ezema, 2010; Ukwueze, 2011; Okpor and Hassan, 2012). This is only achievable when there is evidence of employability skills acquisition from tertiary institutions. The success of SIWES based on the synergic performance of operational roles the three major stakeholders; the institutions (institutional roles), the industries (industrial roles), and the SIWES participating students (students' roles).

The tertiary institutions send their staff to supervise the SIWES participating students on the field after placement. Okpor and Hassan (2012) stated that tertiary institutions place supervisory and effective placement roles, promptly release allowances to the supervisory staff, timely prepare SIWES master and placement lists from their SIWES Coordinating Units, conduct adequate orientation programme for SIWES participating students, and timely submit ITF documents to facilitate prompt release of allowances. On the other hand, the industries play crucial roles in making SIWES objectives achieved. The industries provide the right training facilities or machines to SIWES participating students, play Supervisory role on SIWES participating students, adequately sponsor SIWES activities, establish adequate SIWES-related industries, promptly accept SIWES participating students, effectively evaluate

the performances of SIWES participating students on-the-field, and give feedback to institutions on the success of the programme (Umar and Cyril, 2012; Ikechukwu, 2016).

Statement of the problem

It is common knowledge that the level of unemployment in Nigeria has continued to rise over the years. It is also worrisome that even graduates of tertiary institutions considered as skilled manpower have been bitten by this unemployment bug. There are indications that unemployment being experienced in Nigeria is structural in nature, that is, many graduates are unemployed for lack of skills necessary to fill the existing vacant positions. Unemployment is a hydra-headed monster which exists mostly among the youths in all developing countries including Nigeria. The National Bureau of Statistics (NBS) has recently put the figure of unemployed Nigerians in this last half of 2018 at 23.2%, up from 7.8% in 2015, 23.9% in 2011, 21.1% in 2010 and 19.7% in 2009 (NBS, 2018, 2011).

Maaji and Hassan (2012) research had pointed out that there are 68 million unemployed youths in Nigeria. This number has significantly increased in the recently released document of the NBS. According to the Population reference Bureau, the population of youth in Nigeria is 43%. The high rate of unemployment in Nigeria affects both the educated and those who do not have the opportunity to go to school. This unemployment situation could be as a result of the graduates' occupational and employability skills gaps created between the educational training and skills demand by industries. The two sides; one producing and the other utilizing the work force, need a common ground to operate so that such synergy will result in adequate supply of relevant personnel to all the industrial sectors of the economy. It is when such a balance is in place that the issue of unemployment in Nigeria could be solved. Therefore, this study examined the role of Student Work Experience Scheme (SIWES) in bridging the gaps created between educational training offered by tertiary institutions and skills demand by industries in Nigeria.

Research Questions

1. What are the roles of institutions in bridging the gaps between educational training and skills demand through SIWES in Nigeria?
2. What are the roles of industries in bridging the gaps between educational training and skills demand through SIWES in Nigeria?

The following research hypotheses were tested at a probability level of 0.05:

$H0_1$ There is no significant difference in the mean ratings of TVET Lecturers and CEOs ofIndustries on the roles of institutions in bridging the gaps between educational training and skills demand through SIWES in Nigeria

$H0_2$ There is no significant difference in the mean ratings of TVET Lecturers and CEOs ofIndustries on the roles of industries in bridging the gaps between educational training and skillsdemand through SIWES in Nigeria

Methodology

The study adopted a survey research design and was carried out in Nigeria, comprising 36 states. The states are grouped into six Geographical Regions with six administrative headquarters located in Enugu State (south-east), River State (south-south), Oyo State (south-west), Abuja (north-central), Borno State (north east), and Kaduna State (northwest). The target population was 2,536 comprising 2, 500 TVET Lecturers of Tertiary Institutions and36 Chief Executive Officers(CEOs) from randomly selected industries located in the states involved in the study. A total sample size of 345TVET Lecturers were statistically determined using Yaro Yamane formula and thus selected by simple random sampling technique; while the entire 36 CEOs of Industries were used because of its manageable size. This resulted to a total sample size of 381 respondents. Structured questionnaire developed from the literature reviewed for the study was used to elicit the needed information from the respondents. The questionnaire was divided into two parts. Part I was designed to collect data on the bio-data of the respondents while Part II was divided into two sections; A and B. Section A sought responses on the roles of institutions while section B elicited information on the roles of industries in bridging the gaps between educational training and skills demand through SIWES in the study area. Each item in the questionnaire was assigned a four response options of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD) with values of 4, 3, 2, and 1 respectively. Three experts each in Vocational and Technical Education validated the instrument for data collection. The reliability of the instrument was determined using Cronbach Alpha which yielded coefficient of 0.77. The researcher with the help of six assistants administered the instrument on the respondents by hand and collected them back with a 100% return rate. With the help of Statistical Packages for Social Sciences (SPSS), descriptive statistics were employed to answer the research questions while Independent sample t-test was used to test the null hypotheses at a probability of 0.05. For the research questions, an item with a mean rating of 2.50 or above was taken as agreed while mean response of less than 2.50 was regarded as disagree. A null hypothesis of no significant difference was upheld when the significant values are greater than the probability value (p-value) of 0.05 (Sig.>0.05) and not upheld if otherwise.

Results

The result of the study was presented based on research questions answered and hypotheses tested. They were presented in table 1-3.

Research Question 1

What are the roles of institutions in bridging the gaps between educational training and skills demand through SIWES in Nigeria?

To answer this research question, the instrument was presented to the two groups of respondents to indicate their opinions on the roles of institutions in bridging the gaps between educational training and skills demand. The result is presented in Table 1.

Hypothesis 1

A significant difference does not exist in the mean ratings of TVET Lecturers and CEOs of Industries on the roles of institutions in bridging the gaps between educational training and skills demand through SIWES in Nigeria.

TABLE 1: Mean responses and Independent Sample t-test Distribution of Respondents on the roles of institutions in bridging the gaps between educational training and skills demand through SIWES in Nigeria

N=381 (n_1-TVET Lecturers = 345; n_2-CEOs of Industries = 36)

S/N	Industrial skills required	X	SD	RMK	t	Sig. *(2-tailed)	Dec.
1	Effective supervision role of institutions during SIWES could bridge the gaps in educational training and industrial skills demand	3.15	0.79	Agreed	-1.20	0.22	NS
2	Effective placement role of institutions in SIWES could bridge the gaps could bridge the gaps in educational training and industrial skills demand	2.93	0.98	Agreed	0.32	0.74	NS
3	Prompt release of allowances to supervisory staff from institutions could make SIWES more effective thus bridging the gaps in educational training and industrial skills demand	2.98	0.93	Agree	1.19	0.23	NS
4	Timely preparation of SIWES master and placement list by Schools' Coordinating Units bridges the gaps in educational training and industrial skills demand	3.16	0.80	Agreed	-0.87	0.38	NS
5	Adequate orientation programme for SIWES participating students by institutions addresses the mismatch between educational training and industrial skills demand	2.96	0.93	Agreed	1.27	0.20	NS
6	Timely submission of ITF documents by institutions could facilitate prompt release of allowances thereby bridging the gaps in educational training and industrial skills demand	2.70	1.05	Agree	0.37	0.71	NS
	Cluster Value	**3.00**	**0.89**			**0.38**	**NS**

Note: *$\overline{X}$ = Mean score of respondents; SD= Standard Deviation score of respondents; RMK = Decision for research question; DEC = Decision for hypothesis; df =379; NS – Non Significant; * P>0.05*

Data presented in Table 1 revealed that all six items had their mean values ranged from 2.70—3.16 which were above the cut-off point of 2.50. This showed that the respondents tertiary institutions. A cluster mean of 2.87 indicated positive perception of respondents on the item statements listed in the cluster. The standard deviation (SD) ranged from 0.79—1.05

agreed that all the six items are industrial skills required of graduates of Nigerian

indicating less variability in the opinion of the respondents.

With respect to null hypothesis one, data in table 1

revealed that all the items had their significant values ranged from 0.20—0.74. These values were greater than the probability value of 0.05; indicating that there was no significant (NS) difference in the mean ratings of TVET Lecturers and CEOs of Industries on the six items at their respective t-test values. Thus, the null hypothesis of no significant difference was upheld for each of the six items.

Research question 2

What are the roles of industries in bridging the gaps between educational training and skills demand through SIWES in Nigeria?

To answer this research question, the instrument was presented to respondents to indicate their opinions on the roles of industries in bridging the gaps between educational training and skills demand. The result is presented in Table 2.

Hypothesis 2

There is no significant difference in the mean ratings of TVET Lecturers and CEOs of Industries on the roles of industries in bridging the gaps between educational training and skills demand through

SIWES in Nigeria

TABLE 2: Mean responses and Independent Sample t-test Distribution of Respondents on the roles of industries in bridging the gaps between educational training and skills demand through SIWES in Nigeria

N=381 (n_1-TVET Lecturers = 345; n_2-CEOs of Industries = 36)

S/N	Quality state of school facilities	X	SD	RMK	t	Sig. *(2-tailed)	Dec.
1	Provision of well-equipped training facilities to SIWES participating students by industries bridges the gaps in educational training and industrial skills demand	2.71	1.08	Agreed	-1.16	0.24	NS
2	Supervisory role of industries on SIWES participating students addresses the mismatch between educational training and industrial skills demand	2.68	1.05	Agreed	1.29	0.19	NS
3	Adequate SIWES sponsorship by industries bridges the gaps in educational training and industrial skills demand	2.86	0.97	Agreed	0.19	0.84	NS
4	Establishment of adequate SIWESrelated industries bridges the gaps in educational training and industrial skills demand	2.74	0.97	Agreed	-0.38	0.69	NS
5	Prompt acceptance of SIWES participating students by industries bridges the gaps in educational training and industrial skills demand	2.70	0.98	Agreed	-1.17	0.24	NS
6	Effective on-the-field evaluation of performances of SIWES participating students by industries addresses the gaps in educational training and industrial skills demand	2.72	0.99	Agreed	-0.71	0.47	NS
7	Feedback role of industries to institutions bridges the gaps in educational training and industrial skills demand	2.98	0.93	Agree	1.19	0.23	NS
	Cluster Value	**2.77**	**0.99**	**Disagree**		**0.41**	**NS**

** p>0.05 df =379 NS – Non Significant S – Significant*

Data presented in Table 2 showed that all seven showed that the respondents agreed that all the items had their mean values ranged from 2.68—2.98 seven items are the roles of industries in bridging the which were above the cut-off point of 2.50. This gaps between educational training and skills demand

through SIWES in Nigeria. A cluster mean of 2.77

indicated positive response TVET Lecturers and CEOs of Industries on the item statements listed in the cluster. The standard deviation (SD) ranged from 0.93-1.08 indicating less variability in the opinion of the respondents.

However, the null hypothesis two in table 2 revealed that all the items had their significant values ranged from 0.19—0.84. These values were greater than the probability value of 0.05; indicating that there was no significant (NS) difference in the mean ratings of TVET Lecturers and CEOs of Industries on the seven items at their respective t-test values. Thus, the null hypothesis of no significant difference was upheld for each of the items in the cluster.

Discussion of findings

The findings of the study were discussed based on the research questions answered and the null hypotheses tested. The findings of the study in research question and null hypothesis one showed that both groups of respondents agreed that institutions played very vital roles in bridging the gaps between educational training and skills demand through SIWES in Nigeria. Both respondents agreed on the roles of institutions in bridging the gaps between educational training and skills demand to include effective supervision role, effective placement role, prompt release of allowances to supervisory staff, timely preparation of SIWES master and placement list, adequate orientation programme for SIWES participating students, and timely submission of ITF documents. On the basis of null hypothesis one, findings of the study revealed that there was no significant (NS) difference in the mean ratings of TVET Lecturers and CEOs of Industries on the roles of institutions in bridging the gaps between educational training and skills demand in Nigeria. The findings showed no significant difference between the mean responses of TVET Lecturers and CEOs of Industries on the role of SIWES in correcting industrial skills and educational training mismatch in Nigeria. In corroboration to the findings of this study, institutions play a significant role in human resource development in Nigeria through SIWES (Ugwuanyi and Ezema, 2010) while research findings revealed that SIWES is a good strategic programme for sustainable skill development and utilization in Nigeria (Oyeniyi, 2011; Umar and Cyril, 2012; Ikechukwu, 2016). In contrast to the findings of this study, Olugbenga (2009) carried out a survey study and found out that educational training acquired by students through SIWES are inadequate to meet industrial skills demand. The reasons for the contrasting reports may be attributed to differences in the background of the respondents, location of the studies, and differences in objectives of the studies.

The findings of the study in research question and null hypothesis two revealed that both groups of respondents agreed that industries' role in the provision of well-equipped training facilities to SIWES participating students, supervision of SIWES participating students, SIWES sponsorship and funding,

prompt acceptance of SIWES participating students, effective on-the-field evaluation of performances of SIWES students, and feedback role to institutions could help in bridging the gaps between educational training and skills demand in Nigeria. On the basis of research hypothesis two, findings showed that there was no significant (NS) difference in the mean ratings of TVET Lecturers and CEOs of Industries on the roles of industries in bridging the gaps between educational training and skills demand in Nigeria. In corroboration, Oyeniyi (2012) carried out a research on Students' Industrial Work Experience Scheme (SIWES) and the Incidence of Occupational Misfit in Nigeria and her findings indicated that SIWES has contributed significantly to industrial skills acquisition (78%) and skills utilization for industrial development (68%). According to the research findings, SIWES significantly influenced the certification and accreditation of courses in the Monotechnic and Polytechnic Institutions ($P< 0.05$); and SIWES had also enhanced the extent of funding skills-acquisition programmes by the Federal Government ($P<0.05$); SIWES also improved positively the level of skills utilization by employers of labour ($P< 0.05$).

Conclusion

Based on the findings of the study, it was concluded that both institutions and industries play very significant roles in bridging the gaps between educational training and skills demand in Nigeria. The effective supervisory role, placement role, prompt release of allowances to supervisory staff, timely preparation of SIWES master and placement list, adequate orientation programme for SIWES participating students, and timely submission of ITF documents by institutions could bridge the gaps between educational training and skills demand in Nigeria. The industries, on the other hand, provide well-equipped training facilities to SIWES participating students, supervise SIWES participating students, promptly accept SIWES participating students, effectively evaluate on-the-field performances of SIWES students, and sent feedback to institutions on the areas requiring improvement of the SIWES programme. The above roles of the industries could help in bridging the gaps between educational training and skills demand in Nigeria.

Recommendations

Based on the conclusion, the following recommendations are made:

1. Educational training in Nigerian tertiary institutions should henceforth be prioritized by the government and private education service providers especially in the area of acquisition of generic skills, technological skills, resources management skills, and soft skills in order to attain a perfect balance in industrial skills demand and supply.
2. There need for political will power and support for higher education by the government particularly in the area of adequate funding in order to massively embark on the provision of educational training facilities that will meet international standards and ensure quality graduates' training to meet industries' demand.

3. SIWES should be made an annual program by Industrial Training Fund (ITF) to allow for students progression and achievement of the needed work habits, skills, attitudes and competencies through the training periods for meeting industrial skills demand. The institutions should internally create a compulsory work experience programme per semester to consistently expose students to the needed industrial skills.
4. Students Research Projects in higher institutions should henceforth be based on solving a particular industrial problem identified during the period of SIWES training.
5. The industries should collaborate in the area of providing training facilities to institutions for effective educational training and skills demand.
6. The industries could help in the payment of allowances to SIWES participating students and even retain those that performed well to reduce the level of graduate unemployment in Nigeria.

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