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Issues in the Application of Practical Experiences and Skills Acquired through SIWES By Vocational Education Students From Universities In South-South Nigeria

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Abstract: *The study sought to ascertain the issues in the application of skills acquired through Students Industrial Work Experience Scheme (SIWES) by Vocational Education students in Universities in South-South Nigeria. The study adopted survey research design. The population for the study consist of all the 3,603 Vocational education final year students in the Universities in South-South geopolitical zone of Nigeria as at 2020/2021 session. A sample of 320 Vocational education students was drawn from the total population of 3,603. The sample size of 320 Vocational Education students were determined using Krejcie and Morgan (1970)'s Table at 5% margin of error, 95% confidence level. The instrument for data collection was a self-structured questionnaire titled: Issues in the Application of SIWES Skills by Students Questionnaire (IASIWESSQ): The questionnaire was divided into 2 parts, A and B. Part A dealt with information on the relevant personal data of the respondents while part B has clusters, 1 to 2 which deals with the actual answers to the research questions. The questionnaire items were structured on a 4-point rating scale. The draft copy of the structured questionnaire for data collection was subjected to face validation by five (5) experts, one (1) from the Unit of Measurement and Evaluation, Department of Science Education, one (1) from SIWES Office in Umuahia and three (3) from the Department of Agricultural/Vocational Education, Michael Okpara University of Agriculture, Umudike. To test the reliability of the instrument, a trial test was carried out. The researcher randomly administered the instrument to 20 vocational education students who were randomly selected, from Abia State University and University of Nigeria Nsukka. Cronbach Alpha reliability method was used to determine the internal consistency of the instrument and 0.80 was obtained as the coefficient. Data were collected by the researcher and 10 research assistants who were familiar with the area to distribute and receive the questionnaire from the respondents. Out of the 320 copies of the questionnaire administered, 300 copies were retrieved and used for analysis. Data collected from the respondents were analyzed using mean and standard deviation. It was found from the study that that the application of skills through SIWES by vocational education students was faced with 10 challenges and there are 9 strategies for solving these challenges. The study concluded that if these issues are handled, SIWES would be effective in meeting the mandate at which it was established. It was recommended among others that Government through the Industrial Training Fund should note these issues raised in the study and make effort to solve the ones within their jurisdiction and that school management should create a better relationship with industries and ITF and other employers of labour to ease the process of transiting students to real world of work after the training.*

Key words: *SIWES, Vocational Education, practical experience and skills. .*

Introduction

SIWES is the acronym for Students' Industrial Work Experience Scheme. It is a skill development programme that is designed to prepare students of higher institutions of learning

like Universities, Polytechnics, Monotechnics and Colleges of Education for transition from college environment to the world of work. Students Industrial Work Experience Scheme (SIWES) is a skill development program designed to prepare students of Nigerian tertiary institutions for transition from the college environment to work (Abraham- Ibe, 2014). The need for this arises as a result of global competitiveness in the industry and also the need to produce graduates of Technical, Vocational Education and Training (TVET) who have the skills needed in the industries in Nigeria and the world at large (Njoku, 2014).

Students' Industrial Work Experience Scheme is a skill development programme established by Industrial Training Fund (ITF) in 1973 with the headquarters in Jos Nigeria. It is meant to enable students in tertiary institutions in Nigeria acquire technical skills and experience for professional development in their course of study as it bridges the gap between theory and practice. It is the accepted skills training programme in institutions of higher learning in Nigerian that forms part of the approved academic requirement in various degree programmes. Furthermore, SIWES is also an effort to bridge the existing gap between theory and practice and expose students to necessary skills for smooth transition from the classroom to the world of work. It enables students to acquire technical skills and experience for professional development in their study (Anyaeneh & Ochuba, 2019). Before the inception of the Scheme, there was a growing concern among Nigerian industrialists that graduates of institutions of higher learning lacked adequate practical background experience necessary for employment. So, employers were of the opinion that the theoretical education provided by higher institutions did not meet nor satisfy the needs of the economy. It was against this background that the Fund during its formative years, introduced SIWES to provide students with the opportunity of exposure to handle equipment and machinery in Industry to enable them acquire prerequisite practical knowledge and skills (ITF, 2013 in Okoye and Edokpolor, 2021). These skills aimed at exposing vocational education students to professional work methods as the scheme acts as a catalyst for industrial growth and productivity through professional development.

However, there are some noticeable issues facing students' industrial work experience scheme which impede the fulfillment of its objectives. These challenges include finance which affects certain aspects of its operation like students' supervision and payment of allowances to participants. The issue of students' placement is another challenge facing SIWES operation. Some employers are not willing to accept students into their establishments due to attitudes of some students and for not wanting to take responsibility of remuneration of students after completion of the scheme; this is a challenge. There is also the problem of some students wanting to choose places of attachment by themselves for reasons ranging from not wanting to be far from their homes and wanting to use the period for enjoyment and leisure like holiday period, thereby choosing places that are not related to their profession (Ojokuku, Emeahara, Aboyade, & Chris-Israel, 2015). More so, Ubale (2014), identified some of the problems to include; short duration of the programme which makes it impossible to acquire the needed practical skills; students were sometimes given other assignments other than their primary objectives, students reporting late at their places of assignment due to inability to secure the right places of attachment when they were posted, as well as rejection of students by some organization; conflict sometimes arise between what is taught to students and what obtains in the industries, inadequate/poor supervision of students; some students do not receive training throughout the period due to inadequacy of facilities for training of the attaché; unwillingness or lack of commitment by companies/establishment staff to expose the students to the required skills and training needed, some of the industry based supervisors may be hostile to the students and may not be ready to help the students to learn; students arrange for their own accommodation which is a constraint due to the financial implications of getting a convenient place for them.

Effah, Bomphong, Adu, Anokye and Asamoah (2014), also identified barriers such as difficulty in getting placement, poor supervision from industry based supervisors, restriction of trainees from accessing machinery and equipment, high cost of undergoing the programme, lack of training materials, lack of appropriate skills among professionals among others. Other barriers include shortness of the industrial training period which makes it difficult for trainees to have sufficient industry exposure (Karunaratne & Perera, 2015); unfriendliness of industry workers towards trainees, who for fear of losing their jobs to trainees are unwilling to provide in-depth training to them (Effah *et al.,* 2014). Others include inadequate facilities and brain drain (Nworlu – Elechi, 2013 in Ayatulla, 2023). The authors explained that this refers to the movement of technical teachers and lecturers of technical education which are very much needed for the socio-economic and technological development of Nigeria from one University to the other or to other professions where they feel will offer them better conditions of service. According to Effah et al. (2014), about 45% of all Nigerian professionals including technical educators have left the Nigerian shores over the years. Between 1997 and 2007 alone, Nigeria lost over 10,000 middle level and high level managers to the western economies. About 500 lecturers from Nigerian tertiary institutions have continued to migrate each year, particularly to Europe, America and other African countries. Ayatulla (2023) also identified that staff training and retention is an important issue is the application of SIWESS skills**,** Training of academic staff is a continuous exercise to ensure consistent improvement in the quality of their products. The training can be acquired either locally or overseas. However, overtime, it has always been difficult to get the trainees back to their respective countries after the completion of their study. The salary and service benefits paid to technical education teachers in Nigeria is about the lowest in the world. This leads them to migrate to other countries for better pay. Other issues and challenges as outlined by (Nworlu- Elechi, 2013 in Ayatulla, 2023) include Curriculum of Technical Education, Apathy of Political holders/law makers and the Nigerian Value System

As a way of handling these issues, a number of strategies that could enhance SIWES have also been identified. Kuranaretne & Perera (2015), posit that SIWES will yield the expected result if training is channeled to developing trainees' skills by exposing them to creativity based learning projects and presentation skills, team work activities and managerial skills results. The following as suggested by Oladimeji *et al.* (2016), are some of the solutions or strategies for enhancing SIWES;

1. Proper Coordination and Supervision of the Exercise by various bodies involved in the management of the SIWES exercise i.e. Federal Government, Industrial Training Fund (ITF), NUC, NBTE and NCCE.
2. The various bodies involved in the management of the SIWES programme should liaise with the various industries ahead of time so as to minimize or reduce to the bare rest minimum the high level of refusal to accept students for their industrial training.
3. Issuing of Log Books/IT Letters in time: The log books used by the student during the industrial training period and the IT letters should be issued to the students in time.
4. The various institutions should endeavour to employ experts in the areas of career development to manage the student's industrial placement centres.
5. Timely payment of SIWES allowance to students

Others includes:

1. **Adequate resources should be allocated to technical and vocational education:** Inadequate funds affect the provision of essentials such as well – equipped laboratories and workshops, relevant textbooks and training manuals.

2. **Vocational and technical education requires skilled and proficient teachers:** Teachers preparation should be given a priority attention. There is the need for regular in – service training for teachers of technology to upgrade their skills. Periodical industrial training for teacher is a sine-qua-non in other to keep them abreast with the technological changes in the industry.
3. There is the need for our technical institutions to establish good relationship and linkages with similar institutions abroad as this will promote cross – fertilization of ideas and enhance technology transfer. By doing this the technical institutions will have access to new developments, exchange programmes and other numerous benefits available at those institutions whose technical programmes are well developed.
4. When there is collaboration between technical institutions and industries, the relationship will enable the parties appreciate and understand their needs and proffer the right solutions for the benefits of the society.
5. The curriculum taught in our vocational education institutions should be reviewed to meet the demands of the labour market.
6. There is need to start the teaching of industry-based increase employment opportunities for school leavers of vocational and technical institutions. It will also provide ample opportunities for school dropouts.
7. The government should urgently remove the dichotomy that exists between University and technical institution: Polytechnic institutions should be made to award degrees. This will not only attract more qualified students to vocational/technical education but will also encourage exchange of qualified lecturers/instructors between the two systems.
8. It is important to monitor and regulate the informal sector that produces most of our artisans: Such training outfits can be licensed to certify trainees at the end of the apprenticeship period on behalf of the government. Through this way, charlatans can be easily identified and separated.

Ayatulla (2023) added that the SIWES period for Vocational education students who intend to be productive upon graduation should not be too short if trainees are to benefit maximally from it. In fact, respondents in a study by Ijeoma, Anthonia and Fidelia (2017), were of the view that the training period should range between 6 and 9 months instead of 3 months.

Statement of the problem

The primary objective of vocational education is to foster the acquisition of the necessary hands -on competencies needed to effectively function in the world of work, either as an employee or an employer of labour. This is the mandate of the SIWES which was established in Nigeria in the year 1973 by the industrial training fund (ITF) as a training scheme designed to provide industrial job and occupational skills to students in vocational and technical field of study in institutions of higher learning throughout Nigeria.

However, this is not been achieved due to mirage issues affecting the system. Taylor and Victor (2023) observed that there is lack of practical skills among graduates of Nigerian institutions of higher learning. This situation has given rise to complaints, among parents and industries, that graduates of tertiary institutions are half-groomed, lack manipulative skills and not employable despite the provisions of the curriculum that through SIWES vocational education students should acquire employable skills during training. This implies there are unidentified issues effecting the students acquisition and application of skills after passing through SIWES. There has been dearth of information to this regard across literature hence the need for this study.

Purpose of the study

The main purpose of the study is to ascertain the issues in the application of practical experiences and skills from SIWES by vocational education students in South-South Nigeria. Specifically, the study sought to

1. determine the challenges that constrain Vocational education graduates from practicing with the experiences and skills acquired through SIWES
2. determine the ways of promoting vocational education graduates' acquisition of occupational skills through SIWES.

Research questions

The following research questions were answered for the study

1. what are the challenges that constrain Vocational education graduates from practicing with the experiences and skills acquired through SIWES?
2. what are the ways of promoting vocational education graduates' acquisition and application of occupational skills through SIWES?

Methodology

The study adopted survey research design. The design was suitable for this study because it used questionnaire to collect data from representative sample of the respondents and the findings will be generalized upon the entire population. The area of the study is in South-South, Nigeria with focus on tertiary institutions offering vocational education. The population for this study consisted of all the 3,603 Vocational education final year students in the universities in South-South geopolitical zone of Nigeria as at 2020/2021 session. Statistical records from the University registrar from universities offering Vocational Education in the area shows that there are 3,603 Vocational education final year students made up of 1,510 males and 1,911 females. A sample of 320 Vocational education students was drawn from the total population of 3,603. The sample size of 320 Vocational Education students were determined using Krejcie and Morgan (1970)'s Table at 5% margin of error, 95% confidence level. However, the study adopted a multi-stage sampling procedure to select students from all the schools in the area. The instrument for data collection was a self-structured questionnaire titled: Issues in the Application of SIWES Skills by Students Questionnaire (IASIWESSQ): The questionnaire was divided into 2 parts, A and B. Part A deals with information on the relevant personal data of the respondents while part B has clusters, 1 to 2 which deals with the actual answers to the research questions. Cluster 1 is on challenges to Industrial Work Experience Scheme (10 items), cluster 2 deals with the strategies for enhancing students application of skills from industrial work experience (9 items). The questionnaire items were structured on a 4-point rating scale of strongly agree (SA), Agree (A), Disagree D) and Strongly disagree (SD) with corresponding values of 4, 3,2, and 1 respectively. The draft copy of the structured questionnaire for data collection was subjected to face validation by five (5) experts, one (1) from the Unit of Measurement and Evaluation, Department of Science Education, one (1) from SIWES Office in Umuahia and three (3) from the Department of Agricultural/Vocational Education, Michael Okpara University of Agriculture, Umudike. To test the reliability of the instrument, a trial test was carried out. The researcher randomly administered the instrument to 20 agricultural education students who was randomly selected, from Abia State university and University of Nigeria Nsukka. Cronbach Alpha reliability method was used to determine the internal consistency of the instrument and 0.80 was obtained as the coefficient.

Data were collected by the researcher and 8 research assistants who were familiar with zones to distribute and receive the questionnaire at the spot from the respondents. Out of the 320 copies of the questionnaires administered, 300 copies were retrieved and utilized for analysis. Data collected from the respondents were analyzed using mean and standard deviation based on the 4-point rating used to answer the research questions. A cut-off points of 2.50 were established for decision making. However, the 2.50 were derived from the lower limit of 3 of a 4-point scale.

Results/Findings

Research Question 1: What are the challenges that constrain agricultural education graduates from practicing with the experiences and skills acquired through SIWES?

Table1: Mean and Standard Deviation on the Challenges that Constrain Agricultural Education Students from Practicing with the Experiences and Skills Acquired Through SIWES

S/N	Item statements	$\bar{X}$	SD	Remark
1.	Inadequate farm machineries/equipment to carry out the work	2.96	1.01	Agreed
2.	Inadequate technical know-how on the part of trainers (i.e. technical staff teaching the graduates).	2.94	0.96	Agreed
3.	Transportation was not provided for the students to & fro the farm	2.91	0.97	Agreed
4.	Adequate fund to ensure proper operation or flow of activities was not released.	3.00	0.95	Agreed
5.	Poor communication skill of farm attendants who work with the graduates	3.00	0.91	Agreed
6.	Inadequate supervision and monitoring of graduates' work	3.09	0.92	Agreed
7.	Lack of motivational goals or incentives to make the graduates do better.	3.05	0.88	Agreed
8.	Lack of proper orientation before embarking on the programme	2.99	0.98	Agreed
9	Non-chalant attitude on the part of the lecturers and farm attendants involve in the programme.	3.08	0.92	Agreed
10	Sexual harassment by trainers	3.02	0.94	Agreed

Keys: $\bar{X}$ = Mean of the respondents and SD = Standard Deviation of the respondents

Data in Table 1 revealed that all the 10 items on the challenges that constrain agricultural education students from practicing with the experiences and skills acquired through SIWES had their mean ratings ranged from 2.91 to 3.09 and were above the cut-off point of 2.50. This indicated that the respondents agreed that all the 10 items were the challenges that constrain agricultural education students from practicing with the experiences and skills acquired through SIWES. The standard deviation of all the 10 items ranged from .88 to 1.01, which showed that the respondents were not too far from the mean and opinion of one another in their responses on the challenges that constrain agricultural education graduates from practicing with the experiences and skills acquired through SIWES in South-South, Nigeria.

Research Question 2: What are the ways of promoting agricultural education students acquisition of occupational skills through SIWES?

Table 2: Mean and Standard Deviation Responses on the Ways of Promoting Agricultural Education Students Acquisition of Occupational Skills through SIWES

S/N	Item statements	$\bar{x}$	SD	Remark
1.	Appointing a full time coordinator to oversee the scheme or SIWES programme	3.15	0.90	Agreed
2.	Preparing the graduates for industrial attachment by organizing SIWES Pre-orientation programme before the commencement of the programme	2.99	0.99	Agreed
3.	Establishing a functional industrial attachment unit or SIWES directorate or programme	3.03	1.00	Agreed
4.	Delegating experienced staff to effectively train and supervise the graduates and their activities throughout the programme	3.00	0.93	Agreed
5.	Providing medical care to graduates within the limit of the employer's conditions of service during the period of attachment	2.98	0.93	Agreed
6.	Allowing the representative of accrediting bodies, ITF and institutions to visit graduates on attachment for follow-up activities	3.04	0.88	Agreed
7.	Government making funds available to the accrediting agencies for the scheme	2.98	1.00	Agreed
8.	Making it a policy to involve a clause in every major contract being awarded to contractors to take graduates on industrial attachment	3.09	0.90	Agreed
9	Providing loans and facilities for vocational graduates that intend to embark on self-reliant enterprises after SIWES programme	3.13	0.95	Agreed

Keys: $\bar{X}$ = Mean of the respondents and SD = Standard Deviation of the respondents

Data in Table 2 revealed that all the 9 items on the ways of promoting agricultural education students acquisition of occupational skills through SIWES had their mean ratings ranged from 2.98 to 3.15 and were above the cut-off point of 2.50. This indicated that the respondents agreed that all the 9 items were the ways of promoting agricultural education students acquisition of occupational skills through SIWES. The standard deviation of all the 9 items ranged from .88 to 1.00, which showed that the respondents were not too far from the mean and opinion of one another in their responses on the ways of promoting agricultural education students acquisition of occupational skills through SIWES in South-South, Nigeria.

Discussion of the findings

The findings of the study in research question 1 revealed that there are 10 challenges to students acquisition and application of skills through SIWES. This finding is in keeping with Ubale (2014) who identified the challenges to SIWES to include short duration of the programme which makes it impossible to acquire the needed practical skills. In line with this study more so, Effah, Bomphong, Adu, Anokye and Asamoah (2014) found that barriers such as difficulty in getting placement, poor supervision from industry-based supervisors, restriction of trainees from accessing machinery and equipment, high cost of undergoing the programme, lack of

training materials, lack of appropriate skills among professionals among others are the issues limiting students from acquiring and applying skills through SIWES.

The result of the study in research question 2 revealed that there are 9 strategies for enhancing students skill acquisition and application through SIWES. The finding is in keeping with Anthonia and Fidelia (2017) who recommended that the training period should range between 6 and 9 months instead of 3 months. In line with the findings also, Oladimeji *et al.* (2016) identified some of the solutions or strategies for enhancing SIWES to include Proper Coordination and Supervision of the Exercise by various bodies involved in the management of the SIWES exercise i.e. Federal Government, Industrial Training Fund (ITF), NUC, NBTE and NCCE; The various bodies involved in the management of the SIWES programme should liaise with the various industries ahead of time so as to minimize or reduce to the bare rest minimum the high level of refusal to accept students for their industrial training and issuing of Log Books/IT Letters timely.

Conclusion

Based on the findings of the study, it was concluded that the application of skills through SIWES by vocational education students was faced with 10 challenges and there are 9 strategies for solving these challenges. If these issues are handled, SIWES would be effective in meeting the mandate at which it was established.

Recommendations

Based in the findings of the study, the following recommendations were made

1. Government through the Industrial Training Fund should not these issues raised in the study and make effort to solve the ones within their jurisdiction
2. School management should create a better relationship with industries and ITF and employers of labour to ease the process of transiting students to real world of work and the training
3. Students and lecturers should make effort to utilize the SIWES prommme period properly by adopting the strategies identified in this study

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