

STRATEGIES FOR ENHANCING ENTREPRENEURIAL SKILLS OF TECHNICAL STUDENTS THROUGH STUDENTS' INDUSTRIAL WORK EXPERIENCE SCHEME (SIWES) IN TERTIARY INSTITUTIONS

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Abstract

The study identified the strategies for enhancing entrepreneurial skills of technical students through SIWES in tertiary institutions for sustainable development in Anambra state. Two research questions guided the study and two hypotheses were formulated and tested at 0.05 level of significance. A descriptive survey research design was adopted for the study. The study was specifically carried out in all the tertiary institutions running technical education programmes in Anambra state. The population of the study was 60 final year degree students in technical education programmes of the affected tertiary institutions in Anambra State. There was no sampling as the population was manageable. A 20-item structured questionnaire was used to collect data from the respondents. Three experts from Federal College of Education (Technical) Umunze validated the questionnaire items. Cronbach's alpha was used in determining the internal consistency of the items and a reliability co-efficient of 0.87 was obtained. The result of the study revealed that the respondents agreed on all the items listed as the strategies for enhancing entrepreneurial skills of technical students through SIWES in tertiary institutions for sustainable development in Anambra state. In other words, if these strategies were implemented, it will help to enhance the entrepreneurial skills of technical students for sustainable development. Based on the above, it was recommended, among others, that SIWES co-ordinators in tertiary institutions should source out places of placement on behalf of the students who were not able to get any industry that matches their field of study. In addition, industries should give access to students to use their facilities and such students should be guided in the operation of the machines, tools and equipment when the need arises.

Keywords: Students Industrial Work Experience Scheme (SIWES), Entrepreneurial skills, sustainable development, tertiary institutions.

Introduction

The growing threat of unemployment among graduates from technical institutions over the years is an indication of lack of requisite skills needed to be self-reliance. Olaitan in Shaibu and Nwazue (2024) opined that the graduate unemployment in Nigeria is an indication that most of the graduates do not have the technical ability or entrepreneurial competence that is commensurate with their certificate. This may simply implies that the education system in Nigeria today apparently does not equip the graduates to meet the challenges of the present labour market. To this, Okoli (2013) stated that if our graduates are properly harnessed through entrepreneurial skills Nigeria will be transformed technologically, economically, industrially and socio-politically.

Entrepreneurial skills are business skills which one acquires in order to function effectively in a turbulent business environment as an independent or self-employed person. Akamobi (2020) stated that entrepreneurial skills are those competencies that one is expected to possess to be able to assume, manage and sustain a business venture. Possession of entrepreneurial skills by graduates of technical institutions will transform them from employee to employer and provide

opportunity for them to key into the effort of the government to diversify the economy for sustainable development. Edokpolar (2017) stated that acquisition of entrepreneurial skills may help in promoting entrepreneurial activities that would further provide income for economic growth and development in a sustainable manner. In consonance with this Osoba and Tella (2017) identified that current research has shown a significant interplay between entrepreneurial skills and sustainable development of Nigerian economy.

Sustainable development is a development that meets the needs of the present without compromising the ability of future generation to meet their needs. To Abubakar in Akamobi (2022), sustainable development is the process of improving the range of opportunities that will enable individuals and communities to achieve their aspirations and full potentials over a sustained period of time while maintaining the resilience of economic, social and environmental system. It is a pattern of development that permits the future generations to have access to basic life sustaining essentials; such as food, protection, freedom, healthcare, clothing and shelter as well as current generations having access to at least high-level of living, self-esteem and freedom. From the above definitions, one could adduce that sustainable development is a development that meets the needs and aspirations of the present generation without depriving future generation of the resources required to satisfy their needs.

No nation can achieve sustainable development without a skilled and productive workforce that can meet the changing requirements of its environment. To this, Kawal in Adullahi and Aminu (2016) posited that Nigeria education system at all levels must gear towards equipping future generations with the necessary skills, knowledge and attitudes for coping with the ever-demanding world of work. Oyeniyi in Anyaeneh and Ochuba (2010) revealed that when students are exposed to the right conditions during training programmes it will assist them in acquiring the relevant skills needed for employment. Unfortunately, most Nigerian institutions lack the necessary facilities for acquisition of the required skills needed in the workplace. Supporting this view, Ikechukwu (2016) stated that the school environment is totally different in terms of equipment and facilities from which is obtained in the actual work environment. Olateju (2012) averred that skill acquisition requires adequate facilities and equipment, training materials and consumables without which skills cannot be acquired. It is on this premise that SIWES was introduced to bridge the gap between theory and practice in the curriculum of technical institutions and institutions of higher learning with a view of preparing students for the world of work before graduation.

Students Industrial Work Experience Scheme is a skill- training programme designed to expose and prepare students of technical institutions for work situations, as they exist in the world of work. It provides students opportunities to familiarize themselves with and expose them to tools, equipment and machines that are not available in their various institutions but which are used after graduation. Osinem and Nwoji (2010) stated that the central focus of the scheme is to enlist and strengthen employer's involvement in the education process of preparing students for the world of work. Corroborating with this view Iyioke and Iyioke (2020) posited that the objective of the scheme includes bridging the gap between theory and practice, enhancing contact for job placement and improving the involvement of employers in education process. The success of this scheme depends largely on the extent of relationship between the institution and the industry. Ibidapo (2020) posited that the success of SIWES depends on the efficiency of the Industrial Training Fund (ITF), institutions and employers of labour involved in the articulation and management of the programme.

Besides accepting students for SIWES, the employer is supposed to collaborate with the school in preparing job specification and appointing of industrial- based supervisor (Jimoh, 2015). Osifesa in Singh and Tolessa (2019) stated that industry participation in workplace training is

the primary way of achieving skill acquisition development. Given the need for industry - institution participation in the organization for effective industrial experience for technical students, there has been a clarion call by United Nations Education Scientific and Cultural Organization (UNESCO) and International Labour Organization (ILO) that countries should reorganize and strengthen relationship between technical institutions and industries. Many countries of the world have heeded to this call. Dyankov (2002) explained that in most countries where cooperation exists between the technical institutions and industries, various forms of administrative links have been set up. For instance, in countries like Norway, Benin, Mexico, Zimbabwe, etc, Industrial Advisory Committee consisting of industrialists, employers of technical manpower and representative of vocational education has been constituted which has brought about a more cordial relationship between industries and institutions. Unfortunately, the same kind of relationship seems not to exist in Nigeria. Chukwuedo and Omofonmwan (2015) stated that the major challenge militating against technical and vocational education and training (TVET) manpower development for Industrial and technological development is the link between the industries and the institutions. In the same vein, a study conducted by Egbri and Chukwuedo (2013) revealed that the existing SIWES in Nigeria is not satisfactory and suggest the need for functional school- industry collaboration for capacity building of technical and vocational education students. Also, Osifesa, in Singh and Tolessa (2019) suggested that technical institutions should have close linkages with the world of work to solicit support of industries in the increment of practical training through such activities as donation of equipment, tools, staff exchange programs and placement of trainees and staff on work experience attachment.

Although ITF have been trying to encourage skill acquisition in technical institutions in Nigeria by building good collaboration between TVET institutions and industries but ITF has not been able to meet their mandate in Nigeria (Ali, 2020). ITF in Osimen and Nwoji (2010) outlined the roles of the industries in enhancing entrepreneurial skills of students to include the following among others; accept students for training, allow students trainee access to their facilities, appoint industrial- based supervisors etc. Okorie in Nungse, Ugwuoke, Ogbuanya and Shetima (2020) stated that if the industries participate in the training of students, certain deficiencies that existed in the training of the students will be reduced if not completely eliminated. The institutions according to ITF are to organize orientation courses in collaboration with ITF for their students, identify placement opportunities for students' attachment with employers, appoints coordinators and supporting staff. Surprisingly, some organizations for certain or inexplicable reasons reject students coming to them for industrial training. In some cases, where students are accepted, students are placed on jobs which are not related to their field of study especially the females among them who as a result of their differentiated experiences and socialisation process may perceive themselves as less efficacy than male in relation to entrepreneurial activities. ILO and United Nation International Children's Emergency Fund (UNICEF), (2018) reported that socio-cultural bias about female roles in the workplace can impede girls' access to learning and training, preventing them from gaining necessary skills for future employability. In the same vein, Obidile and Okorafor (2015) reported that culture has strongly interacted with gender to produce sex roles, stereotypes and demands that has erroneously deterred people's attitude towards training a woman. As a result, from young age women in Nigeria has erroneous belief that they are weaker sex and should not be exposed to hard jobs. Taiwo (2012) reported that securing a placement in an organisation that has modern equipment and facilities is very difficult, therefore, most students (especially females) settle for organizations that are not well equipped for the training. At times students on SIWES are not well supervised, this has made some of them to devise all forms of ways of filling the logbook. In fact, some students undergo the programme to pass the course and never to get the needed industrial experience. Ogbonna (2003) observed that supervision by industrial- based

supervisors who are expected to visit the students at least monthly are also not faithful in the task. In the same vein, Ibegbulam in Alao, Osanyinro and Alao (2022) came up with research findings that SIWES failed to impart twenty-first century competencies to students due to insufficient modern equipment and infrastructure in most of the organizations. In this way, the experience acquired during the training programme are irrelevant or adequate to their training needs. It is against this backdrop that the study sought to determine the strategies for enhancing entrepreneurial skills of technical students through SIWES in tertiary institutions for sustainable development in Anambra State.

Statement of the Problem

SIWES is a laudable skill development programme geared towards bridging the gap between theories learnt in the class and the actual practice. Technical students undergoing SIWES are expected to acquire practical skills needed for the world of work in their various disciplines irrespective of gender. A study conducted by Joseph in Ariyo, Ezeda and Sikimi (2020) revealed that industrial training programme has direct effect on the acquisition of skills by technical education students (females inclusive). However, there is lack of entrepreneurial skills among graduates from technical institutions of higher learning in Nigeria. 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. According to Igberadja in Law- Obi and Dara (2020), Nigeria Labour Market reports that Nigeria graduates do not possess the requisite skills due to poor implementation of curriculum. In the same vein, Idris and Rajudduli (2012) reported that employers of labour have continued to express their concern and worry over the quality of the current graduates of technical and vocational education programme because they lack the relevant skills required for employment. This situation also gave rise to the question as to whether SIWES is an effective programme for equipping students with the entrepreneurial skills required for the world of work. The problem of this study is that even with the laudable objectives of SIWES there is still lack of practical skills among graduates of Nigerian institutions of higher learning which if allowed to persist will continue to amount to higher unemployment rate. It therefore becomes necessary to conduct a study to ascertain the strategies for enhancing entrepreneurial skills of technical students through SIWES in tertiary institutions for sustainable development in Anambra state so as to address the problems of acquiring entrepreneurial skills through SIWES among technical students in Anambra State.

Purpose of the Study

The purpose of the study is to determine the strategies for enhancing entrepreneurial skills of technical students through SIWES in tertiary institutions for sustainable development in Anambra State. Specifically, the study sought to determine;

1. Institution - based strategies for enhancing acquisition of entrepreneurial skills of technical students through SIWES in tertiary institutions for sustainable development in Anambra State,
2. Industry-based strategies for enhancing entrepreneurial skills of technical students through SIWES in tertiary institutions for sustainable development in Anambra State.

Research Questions

The following research questions guided the study;

1. What are the institution-based strategies for enhancing acquisition of entrepreneurial skills of technical students through SIWES in tertiary institutions for sustainable development in Anambra State?

2. What are the industry-based strategies for enhancing entrepreneurial skills of technical students through SIWES in tertiary institutions for sustainable development in Anambra State?

Null Hypotheses

The following null hypotheses were tested at 0.05 level of significance.

1. There is no significant difference in the mean responses of male and female students on the institution- based strategies for enhancing entrepreneurial skills of technical students through SIWES in tertiary institutions for sustainable development in Anambra State.
2. Significant difference does not exist in the mean responses of male and female students on the industry- based strategies for enhancing entrepreneurial skills of technical students through SIWES in tertiary institutions for sustainable development in Anambra State.

Methods

The study used a descriptive survey design. The study was carried out in all the tertiary institutions offering technical education in Anambra state. Anambra State was chosen because Anambra State happens to be one of the states with large number of industries where students could be placed for SIWES. The population of the study consists of all the final year technical education students from the two tertiary institutions running technical education programme in the state. A total number of 60 students comprising of 48 males and 12 female students were used for the study. Purposive random sampling was used to select the final year degree students because they fit the population description having done SIWES in their third year. The instrument used for data collection was a 20- item structured questionnaire titled 'Strategies for enhancing entrepreneurial skills of technical students through SIWES in tertiary institutions for sustainable development in Anambra State'. The items were structured on a four- point scale of Strongly Agree, Agree, Disagree and Strongly Disagree. Draft of the questionnaire were given along with the purpose of the study and research questions to three experts from Federal College of Education Technical Umunze, two from school of technical and vocational education and one from department of measurement and evaluation. Their corrections and suggestions guided the researchers in arriving at the final version of the instrument used for the study. The instrument was trial tested using 32 final year technical students in Enugu State who were not part of the population under study. The reliability coefficient yielded 0.87 using Cronbach Alpha method. Copies of the questionnaire were administered to the respondents with the help of research assistants. A total of 60 copies of the questionnaire were distributed to the final year technical students in the tertiary institutions and the 60 questionnaires were returned given 100 percent return. Mean and standard deviation were used to answer research questions. Any mean value above the cut-off mark 2.50 were indicated as agreed while the ones below 2.50 were indicated as disagreed. Also, any item with standard deviation of 1.96 or below (confidence level of 95%) revealed that the respondents were close to the mean and not too far from one another in their responses, in which case, the item was adjudged valid. The t-test statistics were used to test the null hypothesis at 0.05 level of significance. A hypothesis was not rejected where the calculated value of t is equal to or greater than the t - calculated.

Research Question 1

What are the institution-based strategies for enhancing entrepreneurial skills of technical students through SIWES in tertiary institutions for sustainable development in Anambra State?

Table 1: Mean responses of male and female technical students on the institution-based strategies for enhancing entrepreneurial skills of technical students through SIWES in tertiary institutions for sustainable development in Anambra State.

		N= 60		
S/N	Items	X	SD	Remark

1	Institutions should provide placement for students who could not secure industry of their own area of study.	3.10	0.84	Agreed
2	Ensure that logbooks and IT letters are issued to the students on time.	2.67	0.82	Agreed
3	Gather necessary information about the industry their students will be sent to beforehand.	2.82	0.98	Agreed
4	Ensure that experts in student's area of study were assigned to supervise them during the training.	2.45	0.75	Agreed
5	Restructure the programme to be responsive to the needs of the job market.	2.62	0.88	Agreed
6	Give adequate punishment to the institution- based supervisor found wanting on the implementation of the programme.	2.77	0.65	Agreed
7	Ensure that each students present report of completed practical project done during the training.	3.35	0.78	Agreed
8	Students should be made to repeat Industrial training if found wanting during the programme.	3.03	0.99	Agreed
9	Students should be given opportunity to report on time any form of maltreatment or threat in the place of industrial training.	3.20	0.82	Agreed
10	SIWES co-ordinators should monitor the institution- based supervisor to ensure supervision was done as scheduled.	3.40	0.59	Agreed
Mean of means		3.02	0.77	Agreed

Table 1 above revealed that all the items had their mean scores ranged from 2.45 and 3.40 with their corresponding standard deviation less than 1.96. The value of the grand standard deviation is considerably low and this shows that the respondents were not far from one another in their responses meaning that the items were valid. The mean of means of 3.02 indicated that the respondents agreed on all the items as institution- based strategies for enhancing entrepreneurial skills of technical students through SIWES in tertiary institutions for sustainable development in Anambra State.

Research Question 2

What are the industry-based strategies for enhancing entrepreneurial skills of technical students through SIWES in tertiary institutions for sustainable development in Anambra State?

Table 2: Mean response of male and female students on the industrial strategies for enhancing entrepreneurial skills of technical students through SIWES in tertiary institutions for sustainable development in Anambra State.

N=60				
S/N	Items	X	SD	Remark
1.	Industries should be willing to accept students for placement.	3.57	0.56	Agreed
2.	Students should be placed on industrial work experience relevant to their course of study.	3.60	0.59	Agreed
3.	There should be set objectives to be achieved by the end of the practical sessions.	3.26	0.95	Agreed
4.	There should be proper assessment of student's manipulative skills by the industry-based supervisors.	3.08	0.74	Agreed
5.	Ensuring that training environment is safe and secure for students' skill acquisition.	3.50	0.70	Agreed
6.	Allocation of sufficient time for practicals.	3.53	0.75	Agreed
7.	Students should be allowed access to machines, tools and equipment when the need arises.	3.30	0.62	Agreed
8.	Exposure of students to work methods and techniques in handling equipment, tools and machines.	3.55	0.50	Agreed
9.	Industries should help the students to secure accommodation where the need arises.	3.15	0.66	Agreed
10.	Industries should provide stipends for the students to motivate them.	3.73	0.45	Agreed
Mean of means		3.47	0.65	Agreed

Data in table 2 showed that all the items have a mean ranging from 3.15 to 3.73 and the standard deviation less than 1.96. The value of the grand standard deviation showed that the mean values of the respondents were not far from one another in their responses. The mean ratings of all the items fell within the response category of agreed. The mean of means of 3.47 shows that the respondents agreed on all the items as industry-based strategies for enhancing entrepreneurial skills of technical students through SIWES in tertiary institutions for sustainable development in Anambra State.

Hypothesis 1: There is no significant difference in the mean scores of male and female students on the institution-based strategies for enhancing acquisition of entrepreneurial skills of technical students through SIWES in tertiary institutions for sustainable development in Anambra State.

Table 3: Summary of t-test analysis of mean responses of students on institution-based strategies for enhancing entrepreneurial skills of technical students through SIWES in tertiary institutions for sustainable development in Anambra State based on gender.

Gender	N	t	df	Sig. (2 tail)	Mean Diff.	Stand. Errors diff	Decision
Male	48						
		1.658	58	.103	2.39583	1.44471	NS
Female	12						

N=Number of respondents, NS=Not Significant.

The results of t- test analysis in Table 3 showed that the t- value at 0.05 level of significance and 58 degree of freedom for the items was 1.658 with a significant value of 0.103. Since the significant value of 0.103 is more than the 0.05 level of significance this indicated that there is no significant difference in the mean scores of male and female students on the institution-based

strategies for enhancing entrepreneurial skills of technical students through SIWES in tertiary institutions in Anambra State. The null hypothesis is therefore upheld.

Hypothesis 2: Significant difference does not exist in the mean scores of male and female students on the industry-based strategies for enhancing entrepreneurial skills of technical students through SIWES in tertiary institutions in Anambra State.

Table 4: Summary of t- test analysis of mean scores of students on the industry-based strategies for enhancing entrepreneurial skills of technical students through SIWES in tertiary institutions in Anambra State based on gender.

Gender	N	t	df	Sig. (2 tail)	Mean Diff.	Stand. Errors diff.	Decision
Male	48	.374	58	.709	.41667	1.11294	NS
Female	12						

N= Number of respondents, NS= Not significant

The result of t-test analysis in Table 4 showed that the t - value of 0.05 level of significance and 58 degree of freedom for the items is 0.374 with a significant value of 0.709. As the significant value of 0.709 is more than the 0.05 level of significance the null hypothesis is upheld. Therefore, significant difference does not exist in the mean scores of male and female students on the industry-based strategies for enhancing entrepreneurial skills of technical students through SIWES in tertiary institutions for sustainable development in Anambra State

Discussion of Findings

The findings of this study as presented in Table 2, showed that respondents agreed that all the items with mean of means 3.02 were institution -based strategies for enhancing entrepreneurial skills of technical students through SIWES in tertiary institutions for sustainable development in Anambra State. To support this finding Kawal in Adullahi and Aminu (2016) posited that Nigeria education system at all levels must gear towards equipping future generations with the necessary skills, knowledge and attitudes for coping with the ever-demanding world of work. This is in consonance with the research study conducted by Oyeniyi in Anyaeneh and Ochuba (2010) which revealed that when students are exposed to the right conditions during training programmes it will assist them in acquiring the relevant skills needed for employment

On the hypothesis, the study revealed that there is no significant difference in the mean responses of male and female students on the institution-based strategies for enhancing entrepreneurial skills of technical students through SIWES in tertiary institutions for sustainable development in Anambra State. This implies that student's gender has no effect on their opinion with regards to institution -based strategies for enhancing entrepreneurial skills of technical students through SIWES in tertiary institutions for sustainable development in Anambra State. This is in agreement with Obidile and Okorafor (2015) who reported that culture has strongly interacted with gender to produce sex roles, stereotypes and demands that has deterred people's attitudes towards training women. In other words SIWES co-ordinators at institutions should source out place of placement on behalf of the students who were not able to get any industry that match their field of study and preference should be given to female students during training in workplace.

The results of the study in Table 2 indicating that the respondents agreed that all the items are industry-based strategies for enhancing entrepreneurial skills of technical students through SIWES in tertiary institutions for sustainable development in Anambra State. Supporting this view ITF in Osinem and Nwoji (2010) stated that the role of industries in enhancing

entrepreneurial skills of students to include the following among others; accept students for training, allow students trainee access to their facilities, appoint industrial- based supervisors etc. In line with the above statement Singh and Tolessa (2019) stated that industry participation in workplace training opportunities is the primary way of achieving skill acquisition development. This goes to buttress the opinion of Okorie in Nungse, Ugwuoke, Ogbuanya and Shetima (2020) that if the industries participate in the training of students, certain deficiencies that existed in the training of the students will be reduced if not completely eliminated.

The hypothesis showed that there is no significant difference in the mean responses of male and female students on the industry-based strategies for enhancing entrepreneurial skills of technical students through SIWES in tertiary institutions for sustainable development in Anambra State. In other words, the mean responses of the respondents were not influenced by gender. Agreeing with this, ILO and UNICEF (2018) reported that socio-cultural bias about female roles in the workplace can impede girls' access to learning and training, preventing them from gaining necessary skills for future employability. Therefore industrial-based supervisors should give more access to female students to use their facilities and such students guided in operation of the machines, tools and equipment when the need arises.

Conclusion

The study revealed that despite the fact that SIWES has been neglected resulting to student's inability to acquire the required skills needed to fit into the world of work, if institutions and the employers of labour should collaborate in implementation of the programme it could help in addressing the challenges of acquisition of entrepreneurial skill in tertiary institutions for sustainability.

Recommendations

The findings of this study led to the following recommendations:

1. Institutions should organise orientation services for students to acquaint them with the rules, regulations and acceptable behaviour expected of them during the training as well as the need to devote their time in the skills they are being taught during the training programme.
2. SIWES co-ordinators at institutions should source out places of placement on behalf of the students who were not able to get any industry that match their field of study especially the females.
3. Institution- based SIWES co-ordinators should ensure that supervisors assigned to supervise these students are experts in the students' area of study and visits them as scheduled since proper supervision will help to detect the problems students encounter in their offices as well as identify students who do not take part in the training.
4. Institutions should ensure that each student present a report on special practical project carried out during the training to the department and each students assessed to find out the achievements recorded by the student.
5. Institutions should liaise with the government to extend the period of SIWES to at least one year to enable full integration of practical skills.
6. Institutions should form a strong bond and collaboration with industries beyond SIWES programme in such a way that students can visit the industries for work-study programme
7. Industries should provide stipends for students placed under them to motivate them.
8. Industries should give access to students to use their facilities and such students guided in the operation of the machines, tools and equipment when the need arises. Industry-based supervisors should ensure that students placed under them work in a safe and secured work environment.

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