International Academic Research Consortium Journals (IARCJ)
International Journal of Agricultural Science and Technology
ISSN: 2360-9888. Volume 12, Issue 1
PP 272-283, September, 2024
DOI: 427251-452781-1233
arcnjournals@gmail.com
https://arcnjournals.org

Influence Of Students Industrial Work Experience Scheme On Agricultural Education Students' Skill Development In Crop Production In South-Outh Nigeria

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Abstract: *The study sought to ascertain the influence of Students Industrial Work Experience Scheme (SIWES) on agricultural education students' skills development in crop production in South, South Nigeria. The study adopted survey research design. Two research questions were answered for the study. The population for the study consisted of all the 3,603 Agricultural education final year students in the Universities in South-South geopolitical zone of Nigeria as at 2020/2021 session. A sample of 320 Agricultural education students were drawn from the total population of 3,603 using Krejcie and Morgan (1970)'s Table at 5% margin of error and 95% confidence level. The instrument for data collection was a self - structured questionnaire titled: Industrial Work Experience Scheme (SIWES) on Agricultural Education Students Skill Development in Crop production Questionnaire (IWESAESSDCPQ): 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 dealt with the actual answers to the research questions. The questionnaire items were structured on a 4-point rating scale of Very High Extent (VHE), High Extent (HE), Low Extent (LE) and Very Low Extent (VLE) with corresponding values of 4, 3,2, and 1 respectively. The draft copy of the structured questionnaire for data collection was subjected to face validated by five (5) experts while the reliability yielded 0.80 using Cronbach alpha coefficient method. Data were collected by the researcher and 10 research assistants who were familiar with the area to distribute and receive the questionnaire. 300 copies were retrieved for analyses using mean, standard deviation for research questions and t-test for testing hypotheses. It was found from the study that SIWES has improved agricultural education students experience and skill development in agricultural crop production and processing in 20 ways and to a high extent. It was further recommended that: school management should further tighten their relationship with crop production and processing industries and ITF to enable students apply the skill they acquired through SIWES to secure job after school and that students should prioritize their SIWES period to ensure they utilize the opportunity to acquire all the necessary skills in crop production and processing as it has been established in this study that is leads to improved skill development.*

Key words: *SIWES, Agricultural Education Students, skills development and crop production*

Introduction

Students Industrial Work Experience Scheme (SIWES) according to Anyaeneh and Ochuba (2019), is a planned and supervised training intervention based on stated and specific learning and career objectives, and geared towards developing the occupational competencies of the participants including crop production competencies. The author maintained that the

programme required to be undertaken by all students of tertiary institutions in Nigeria pursuing courses in engineering, agriculture and other fields. Karunaratne and Perera (2015), noted that SIWES is the key factor in enhancing the efficiency and expertise of the workforce. According to the author, it prepares Agricultural Education students for labour market and crop production occupations. It has become an innovative phenomenon in human resources development and occupational training in Nigeria.

Ogbu (2015), reported that SIWES has reached wide dimensions in recent times and all industrial and commercial establishments contribute to make it operational by providing specific skills in form of experience in different occupations including crop production occupation. There is hardly any sizeable industrial and commercial establishment in different works of life that is not involved in the scheme. The authors noted that the rapid growth in the number of students and institutions was an indication of the acceptability of the scheme by institutions, employers and students for occupational experience growth of the participants including Agricultural Education students in universities.

On the impact of SIWES in technical skill development jointly studied by the ITF (2013) in Okoye and Edokpolor (2021), it was reported that all the three employers in the study positively indicated that the period of exposure of Agricultural Education students to agricultural industry did influence the acquisition of technical skills in crop production and other occupations. Similarly, the result showed that over half of the students strongly agreed that the period of exposure to agricultural industry influenced their acquisition of technical skills in crop production. This was an indication of the importance of the scheme to the acquisition of skills in crop production and other occupations for the development of the country. According to the report, the study showed that some students were employed due to their outstanding performances.

The absorption of former SIWES students by agricultural industries was quite high as over half of the industries had employed four or more of their former SIWES students. These students cannot be retained by the agricultural industries if there was no improvement in experiences and skills needed to perform significant tasks in crop production. Usman and Tasmin (2015), asserted that the SIWES as an arm of Industrial Training Fund has emerged as a stimulating factor in making education real and meaningful to the students as students acquire specific skills relevant to their occupations. Usman and Tasmin (2015), noted that things were fast changing particularly as it was becoming a thing of past when white-collar jobs were viewed with not only reverence but as most rewarding type of work for a young man. According to the author, a programme like Student Industrial Work Experience Scheme was viewed as having many advantages in preparing people for self-employment in their chosen occupation including crop production occupation, which ultimately would lead to a rapid development of the country.

Therefore, SIWES helps Agricultural Education students acquire agricultural experiences and skills in production of various crops. Agricultural skills are the capabilities a specialist in the field of agriculture must possess in order to work as a professional in the area (Jacob, Tyowuah and Akor, 2020). These skills will help the graduates secure employment in crop production industries or the skills could be utilized by the Agricultural Education graduates to establish and manage crop farms.

The concept of agricultural skill acquisition is of great concern to every Nigerian both in private and public sector. Ebner *et al.* (2017), stressed that the situation was more worrisome especially now that the country was besieged with poor quality of Agricultural Education graduates from educational institutions, which had led to unemployment, antisocial behaviour, idleness, crimes, socio-economic problems, technological stagnation and poverty. Muhamamadu (2017), affirmed that through Student Industrial Work Experience Scheme, a meaningful work experience is combined with formal education thereby enabling Agricultural Education students to acquire agricultural knowledge, skills and appropriate work attitude which was essential for agricultural processing occupation progress after school. Usman and Tasmin (2015), indicated that the agricultural industrial based instructor should make himself available to Agricultural Education students, listen carefully and ask thoughtful questions to gain participation in solving problems, planning and making decisions, seek assistance from the Agricultural Education students as they contribute to organizations‟ growth and effectiveness, and entertaining questions, select the right person for delegation of assignment bearing in mind that each person must be given opportunities to development on the agricultural processing training.

The rate of adaptation in agricultural processing occupation after school according to Isreal (2014), was dependent on the method of instruction in the agricultural industry which could be discussion, project or demonstration adopted, how demonstrative the method was, and importantly, the degree of students' participation. The author maintained that the exposure of Agricultural Education students to work experience whether rotational or static on single operation and the quality of the agricultural processing training affect the level of agricultural skill acquisition. Agricultural Education students should not only be exposed on varied agricultural experiences but reasonable time should be spent on each stage of agricultural processing training to allow for enough practice necessary for habit formation.

Akerejola (2014), noted that industrial work experience was necessary for agricultural processing job preparation. According to the author, productivity would be enhanced by experienced graduates who were exposed to the value and skills of agricultural industry and these would make them move smoothly into agricultural processing occupation after graduation. Therefore, without appropriate agricultural skills and experiences young graduates were not properly trained on work norms, and role behaviour among others, which are essential components that would ensure success in agricultural processing occupation.

SIWES is similar to "school to work transition" programme of the United States of America which introduces the philosophy of school-based, work-based, and connecting activities to expose Agricultural Education students to potential future careers (Raimi, 2015). It was designed to prepare Agricultural Education students to enter the job market (www.wikipedia.com). Ojuku, Emechara, Aboyade and Chris-Israel (2015), reported that the component of school-to-work transition programme should be the same with the component of new youth apprenticeship model which include:

a) designed to be integral part of education of a broad cross section of students;
b) integrates academic and vocational instruction;
c) combines classroom and on-the-job instruction; and
d) culminates in recognized and accepted credentials. SIWES prepares

Agricultural Education students for successful transition to agricultural processing occupation (Akerejola, 2014). Anyaeneh and Ochuba (2019), contended that SIWES helps in preparing Agricultural Education students for employment and makes transition from school to agricultural processing enterprise easier after graduation. The author noted that Agricultural Education students that participate conscientiously in industrial training had the benefit of agricultural processing skills and competencies they acquired. These relevant agricultural processing skills remain a part of the recipients of industrial training as life-long assets which may not be taken away from them. The agricultural processing knowledge and skills acquired through training are internalized and become relevant when required to perform jobs or functions in agricultural processing occupation after graduation (Anyaeneh and Ochuba, 2019). The agricultural practical experience acquired by Agricultural Education graduates on SIWES help to enhance their job performance in agricultural processing enterprise (Akerejola, 2014). The relevant production skills would help learners move smoothly from school to the field of agricultural processing occupation with minimum stress.

Statement of the problem

The need for ensuring that the theoretical knowledge acquired by students is matched with their practical competence gave room to the establishment of Student Industrial Work Experience Scheme (SIWES) with the aim to help the students to achieve their set goals and become specialists in their various fields of study such as crop production. There is no doubt that SIWES is a laudable skills development programme, geared towards bridging the gap between theories learnt in the class and the actual practice.

However, this is not the case as Taylor and Victor (2023) observed that there is lack of practical skills among graduates of Nigerian institutions of higher learning such as agricultural education. 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. The situation also gave rise to the question as to whether the SIWES is an effective platform for equipping agricultural education graduates with the crop production competencies they so much require. It is against this background that the study is conceived to ascertain the extent to which Students Industrial Work Experience Scheme has improved on the Agricultural Education students who have passed through the programme with regards to crop production and processing.

Purpose of the study

The main purpose of the study is to ascertain the influence of SIWES on Agricultural Education students' skill development in crop production. Specifically, the study sought to ascertain the extent at which SIWES has improved agricultural education students' skill development in:

1. Crop production
2. Crop products processing

Research questions

The following research questions were answered for the study

1. To what extent has SIWES improved agricultural education students' skill development in field crop production?

2. To what extent has SIWES improved agricultural education students' skill development in Crop processing?

Hypotheses

The following hypotheses were tested for the study at 0.05 level of significance

1. There is no significance difference between the mean response of male and female students on extent SIWES has improved agricultural education students' skill development in field crop production
2. There is no significance difference between the mean response of male and female students on extent SIWES has improved agricultural education students' skill development in Crop processing

Methodology

The study adopted survey research design. The design, according to Nworgu (2006), is the one in which a group of people or items is studied by collecting data through interview or questionnaire and analyzing them. 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 agricultural education. The choice of this area was because the graduates are from different social economic background with good upbringing for entrepreneurial activities. The population for this study consisted of all the 3,603 Agricultural 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 Agricultural Education in the area shows that there are 3,603 Agricultural education final year students made up of 1,510 males and 1,911 females. A sample of 320 Agricultural education students was drawn from the total population of 3,603. The sample size of 320 Agricultural 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 self - structured questionnaire titled: Industrial Work Experience Scheme (SIWES) on Agricultural Education Students Skills Development in Crop production Questionnaire (IWESAESSDCPQ): 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 extent Students Industrial Work Experience Scheme (SIWES) has improved Agricultural Education students skills development in crop production (10 items), cluster 2 deals the extent Students Industrial Work Experience Scheme (SIWES) has improved Agricultural Education students skills development in crop processing (10 items). The questionnaire items were structured on a 4-point rating scale of Very High Extent (VHE), High Extent (HE), Low Extent (LE) and Very Low Extent (VLE) with corresponding values of 4, 3,2, and 1 respectively. The draft copy of the structured questionnaire for data collection was subjected to face validated 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 items and 0.80 was obtained as the coefficient

Data were collected by the researcher and 10 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 and t-test was used to test the null hypotheses at 0.05 level of significance. To answer the research questions, a cut-off point 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. Real limit normal values adopted for the analysis is presented in Table 3.1.

Table 3.1: Real Limits of Nominal Values

Nominal Value	Scaling Statement	Real Limits of Numbers
4	Very High Extent (VHE)	3.50-4.0
3	High Extent (HE)	2.50-3.49
2	Low Extent (LE)	1.50-2.49
1	Very Low Extent (VLE)	Below 1.50

For hypothesis testing, the null hypothesis for any item was rejected when the calculated t-value is higher than the alpha value of 0.05 but was accepted when the calculated t-value is less than or equal to the alpha value of 0.05 level of significance.

Result/findings

Research question 1: To what extent has SIWES improved agricultural education students' skill development in field crop production?

Hypothesis 2: There is no significance difference between the mean response of male and female students on the extent SIWES has improved agricultural education students' skill development in field crop production.

Table 1: Mean, Standard deviation and t-Test Analysis on the extent Students Industrial Work Experience Scheme (SIWES) has improved Agricultural Education Students Skill Development in Crop Production

S/N	Item statement	$\bar{X}_M$	S_M	$\bar{X}_F$	S_F	p-value	Rmk
1	The graduates can now identify the different soils for cultivation of different soils	2.86	0.94	2.82	1.02	0.37	HE, NS
2	The graduates can now prepare beds for farming operations	2.84	0.95	2.81	0.91	0.17	HE, NS
3	The graduates can now identify crop diseases and crop pest	2.80	0.89	2.79	0.97	0.15	HE, NS
4	The graduates can carry out the different planting operations of crops	2.92	1.00	2.85	0.86	0.29	HE, NS
5	The graduates control crop diseases using appropriate chemicals	2.91	0.83	2.87	0.94	0.02	HE, S*
6	The graduates can identify appropriate fertilizer required by different crops	2.98	0.87	2.98	0.95	0.83	HE, NS
7	The students can mix agrochemicals well	2.95	0.86	2.93	0.87	0.21	HE, NS
8	The graduates can carry out weeding operations in the farm	2.90	0.95	2.87	0.97	0.78	HE, NS
9	The graduates can now dig ridges, nursery bed and mounds	3.00	0.88	2.94	0.95	0.00	HE, S*
10	The graduates now know pesticides to apply to the plant	2.92	0.80	2.90	1.05	0.00	HE, S*

Keys: $\bar{X}_M$ = Mean of Male Graduates, S_M = Standard deviation of Male students', $\bar{X}_F$ = Mean of Female students, S_M = Standard deviation of Female students', Sig = Significant value = P≥0.05, S = Significant, NS= Not significant, HE- high extent and Rmk = Remark

Data presented in Table 1 revealed that all the 10 items on the extent Students Industrial Work Experience Scheme (SIWES) has enabled Agricultural Education graduates to acquire agricultural experiences in crop production had their mean responses ranged from 2.79 to 2.98, which fall within the real limit of number range of 2.50- 3.49. This indicated that the respondents agreed that to high extent Students Industrial Work Experience Scheme (SIWES) has enabled Agricultural Education students to acquire agricultural experiences in crop production. The standard deviation of all the 10 items ranged from .86 to .98, which showed that the respondents were not too far from the mean and opinion of one another in their responses on the extent Students Industrial Work Experience Scheme (SIWES) has enabled Agricultural Education students to acquire agricultural experiences in crop production.

Data presented in Table 1 revealed that items 1, 2, 3, 4, 6, 7 and 8 had their p-values ranged from 0.15 to 0.78 which were greater than 0.05 alpha level of significance. This indicated that

there was no significant difference between the mean responses of male and female Students of agricultural Education on the extent Students Industrial Work Experience Scheme (SIWES) has enabled Agricultural Education studeents to acquire agricultural experiences and skills required for success in crop production on those items. Therefore, the hypothesis of no significant difference in the mean responses of the two groups of respondents on the extent Students Industrial Work Experience Scheme (SIWES) has enabled Agricultural Education graduates to acquire agricultural experiences and skills required for success in crop production was upheld for these items.

The data also showed that item 5, 9 and 10 had its p-value ranged 0.00 to 0.02 which were less than 0.05 alpha level of significance. This indicated that there was a significant difference between the mean responses of male and female Students of agricultural Education on the extent Students Industrial Work Experience Scheme (SIWES) has enabled Agricultural Education graduates to acquire agricultural experiences and skills required for success in crop production on those items. Therefore, the hypothesis of no significant difference in the mean responses of the two groups of respondents on the extent Students Industrial Work Experience Scheme (SIWES) has enabled Agricultural Education graduates to acquire agricultural experiences and skills required for success in crop production was not upheld for these items.

Research question 2: To what extent has SIWES improved agricultural education graduates skill development in Crop processing?

Hypothesis 2: There is no significance difference between the mean response of male and female students on extent SIWES has improved agricultural education graduates' skill development in Crop processing.

Table 2: Mean, Standard deviation and t-Test Analysis on the extent Students Industrial Work Experience Scheme (SIWES) has improved Agricultural Education Students Skill Development in Crop processing

	Item statements	$\bar{X}_M$	S_M	$\bar{X}_F$	S_F	p-value.	Rmk
	The graduates can now sort fruits and vegetables by colour, size and quality using screens, diverging belts, roller sorters and weight sorters	2.97	0.96	2.89	1.03	0.40	HE, NS
	The graduates can now clean and sorted grains, nuts and seeds are by size, shape, specific gravity and surface characteristics	2.95	0.97	2.87	0.92	0.19	HE, NS
	The graduates can now grade farm products by colour, quality, shape and size	2.91	0.91	2.86	0.98	0.17	HE, NS
	The graduates can now clean agricultural products by soaking or water spraying or by using rotary drums, brush washers, shaker washers, or any combination t	3.03	1.01	2.91	0.87	0.40	HE, NS
	The graduates can now cut fruit and vegetables in preparation for processing operations such as freezing or canning	3.01	0.84	2.94	0.95	0.01	HE, NS
	The graduates can now typically chopped forages such as corn and silage to optimize the ensiling process.	3.08	0.87	3.05	0.95	0.92	HE, NS
	The graduates can now shred some products to assist in mixing and drying operations.	3.05	0.86	3.00	0.88	0.35	HE, NS
	The graduates can now crush some agricultural products for juice or oil extraction and to expedite drying.	3.00	0.96	2.93	0.98	0.38	HE, NS
	The graduates can now carry out milling operations to produce flour or to separate fibres in crops such as fla	3.11	0.85	3.00	0.95	0.00	HE, NS
	The graduates can now carry out biological treatments to enhance product shelf life	3.03	0.80	2.95	1.05	0.00	HE, NS

Keys: $\bar{X}_M$ = Mean of Male Graduates, S_M = Standard deviation of Male students', $\bar{X}_F$ = Mean of Female students, S_M = Standard deviation of Female students', Sig = Significant value = P≥0.05, S = Significant, NS= Not significant, HE- high extent and Rmk = Remark

Data in Table 2 revealed that all the 10 items on the extent SIWES have enabled Agricultural Education graduates to acquire experiences and skills required in agricultural processing enterprises had their mean ratings ranged from 2.88 to 3.06 and were within the real limit of number range of 2.50- 3.49. This indicated that the respondents agreed that SIWES has enabled Agricultural Education students to acquire experiences and skills required in agricultural processing enterprises to a high extent. The standard deviation of all the 10 items ranged from 0.87 to 0.99, which showed that the respondents were not too far from the mean and opinion of one another in their responses on the extent SIWES has enabled Agricultural Education students to acquire experiences and skills required in crop processing.

Data in Table 2 revealed that item 1,2,3,4,6,7 and 8 had their p-values ranged from 0.17 to 0.92 and were greater than the alpha-value of 0.05. This implied that there was no significant difference between the mean responses of male and female agricultural education students on the extent SIWES has enabled Agricultural Education graduates to acquire experiences and skills required in agricultural processing enterprises on those items. Therefore, the hypothesis of no significant difference in the mean responses of the two groups of respondents on the male and female Teachers of agricultural education graduates on extent SIWES has enabled Agricultural Education graduates to acquire experiences and skills required in agricultural processing enterprises was not rejected on these items.

The data also showed that item 5, 9 and 10 had its p-value ranged 0.00 to 0.01 which were less than 0.05 alpha level of significance. This indicated that there was a significant difference between the mean responses of male and female agricultural education students on the extent SIWES has enabled Agricultural Education graduates to acquire experiences and skills required in agricultural processing enterprises on those items. Therefore, the hypothesis of no significant difference between the mean responses of male and female agricultural education students on the extent SIWES has enabled Agricultural Education students to acquire experiences and skills required in crop processing enterprises was rejected for these items.

Discussion of the findings

The result of the study in research question 1 revealed that SIWES has influenced agricultural education students skill development in crops production in 10 ways and to a high extent. This finding is in keeping with Usman and Tasmin (2015) who reported that the programme like Student Industrial Work Experience Scheme has prepared people for self-employment in their chosen occupation including crop production occupation. The result of the study in hypothesis 1 is in line with Okoye and Edokpolor (2021) who reported that all the three employers in their study positively indicated that the period of exposure of Agricultural Education students to agricultural industry did significantly influence the acquisition of technical skills in crop production and other occupations. In line with the findings in research question 1 also, result from the study by ITF (2013) showed that over half of the students strongly agreed that the period of exposure to agricultural industry influenced their acquisition of technical skills in crop production. This indicates the importance of the scheme to the acquisition of skills in crop production and other occupations for the development of the country.

The result of the study in research question 2 revealed that SIWES has influenced agricultural education students skill development in agricultural product processing in 10 ways and to a high extent. The finding is in keeping with Akerejola (2014) who reported that industrial experience was necessary for agricultural processing job preparation. In line with the finding

further, Anyaeneh and Ochuba (2019) found that SIWES helps in preparing Agricultural Education students for employment and makes transition from school to agricultural processing enterprise easier after graduation

Conclusion

Based on the findings resulting from the data collected and analyzed, the study concluded that SIWES has improved agricultural education students experience and skill development in agricultural crop production and processing in 20 ways and to a high extent.

Recommendations

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

1. School management should further tighten their relationship with crop production and processing industries and ITF to enable students apply the skill they acquired through SIWES to secure job after school
2. Students should prioritize their SIWES period to ensure they utilize the opportunity to acquire all the necessary skills in crop production and processing as it has been established in this study that is leads to improved skill development.

References

Akerejola O. (2014) Information and Guidelines for students Industrial Work Experience Scheme. Retrieved from http://www.itfnigeria.org|docs|siwes-op-guide.pdf.

Anyaeneh, V. K. & Ochuba, C. D. (2019). Influence of Students' Industrial Work Experience Scheme (SIWES) in Enhancing Employable Skills of Business Education Students in Federal Tertiary Institutions in Anambra State Vivian. *Multidisciplinary Journal of Education, Research and Development*, 3(1), 167; 1-14.

Ebner, P., McNamara, K., Deering, A., Oliver, H., Rahimi, M., & Faisal, H. (2017). Towards developing an industry-validated food technology curriculum in Afghanistan. *Journal of Agricultural Education,* 58(3), 72-83. doi: 10.5032/jae.2017.03072

Israel, H. C. (2014). Influence Of Students' Industrial Work Experience Scheme On Professional Development Of Library And Information Science Students In South-West, Nigeria. Retrieved from Wikipedia.org.

ITF (2013). *Proceedings and Resolutions of the 10 Biennial SIWES National Conference July, 2006*. Industrial Training Fund University of Jos: An evaluation of the impact of Student Industrial Training Fund on technical skill development in Nigeria Jos, June 2011.

Jacob, O. C., Tyowuah, M. N. and Akor, J. T. (2020). Impact of Students Industrial Work Experience Scheme on Entrepreneurial competence for pre-service teachers. *International Journal of Education and Research,* 8(7), 1-10.

Karunaratne, K. & Perera, N. (2015). Students' perception of effectiveness of industrial internship programme. *In Proceedings of the International Conference on GlobalBusiness Economics, Finance and social Sciences (GB15_Thai Conference, Bangkok,Thailand,* 2022 February. Retrieved from www. globalbizresearch.org

Muhamamadu, B. A. (2017). Current Trends in Students Industrial Work Experience Scheme: A comparative Analysis of Nigeria, United States of America, Turkey and Germany. *A Paper presentation in the Course of 2017 Student Industrial Work Experience Scheme Biennial Conference, Held at ShehuYaradu conference centre, Abuja between August 15 and 16, 2017*

Ogbu, J. E. (2015). Impact of SIWES on electrical technology education students' skill acquisition. *Journal of Natural Sciences Research, 5 (22), 54- 60.*

Ojokuku, B. Y., Emeahara, E. N., Aboyade, M. A. & Chris-Israel, H. (2015). "Influence Of Students' Industrial Work Experience Scheme On Professional Development Of Library And Information Science Students In SouthWest, Nigeria" (2015). *Library Philosophy and Practice (e-journal)*. 1330.

Ojokuku, B. Y., Emeahara, E. N., Aboyade, M. A. & Chris-Israel, H. D. (2015).Influence of SIWES on Professional Development of Library and Information Science Students. In South-West, Nigeria. *Library Philosophy and Practice (E-journal) Paper*, 1330. Http://digitacommons.unl.edu/libphilprac/1330

Okoye, K. R. & Edokpolor, J. E. (2021). Effect of industrial work experience in developing Technical and Vocational Education undergraduates' employability skills. *Asian Journal of Assessment in Teaching and Learning*, *11*(1), 1-12. https://doi.org/10.37134/ajatel.vol11.1.1.2021.

Raimi, K. K. (2015). Evaluation Of Students' Industrial Work Experience Scheme: A case study of undergraduate students of faculty of Communication and Information Sciences University Of Ilorin, Nigeria.

Taylor, D. I. & Victor, N. (2023). Influence of students' industrial work experience scheme (SIWES) on employment opportunities of adult education graduates from universities in River State. *International Journal of Social Sciences and Management studies Vol 2(2),* 1-15.

Usman, A. S., & Tasmin, R. (2015). Entrepreneurial Skills Development Strategies through the Mandatory Students' Industrial Work Experience Scheme in Nigeria. *Social and Behavioral Sciences*, 204; 254 – 258.