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Influence of SIWES on Agricultural Education Final Year Students' Skill Development in Universities in Sourth Sourth, Nigeria

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Abstract: *The study sought to ascertain the influence of Students Industrial Work Experience Scheme (SIWES) on agricultural education final year students' skill development in Universities in South-South, Nigeria. Three research questions were answered and three hypotheses were tested. A descriptive survey research design was adopted for the study. 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. 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. Further, 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 Questionnaire (IWESAESSSDQ). The questionnaire items was 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 valves of 4, 3,2, and 1 respectively. The questionnaire for data collection was subjected to face validated by five (5) experts while the reliability of the instrument yielded 0.80 using Cronbach alpha method. Data were collected by the researcher and 10 research assistants. Out of the 320 copies of the questionnaires administered, 300 copies were retrieved and analyzed using mean and standard deviation for research questions and t-test for testing hypotheses at 0.05 level of significance. It was found from the study that there is high extent at which SIWES has enabled agricultural education students gain experience and acquire practical skills in: crop production, livestock production and farm machine handling and maintenance. Among the recommendations made is that the SIWES coordinators should ensure that emphasis should be focused on providing employability skills in crop production especially in areas of identifying crop diseases and pest, controlling crop diseases using appropriate chemicals and identify appropriate fertilizer required by different crops.*

Keywords: *SIWES, Agricultural Education and skill Development*

Introduction

The acquisition and development of knowledge, skills and capabilities can either be facilitated through the educational system or through other non-formal educational approaches. It is also observed that an effective industrialization policy is certainly difficult, if not impossible, without an effective human resources development policy (Olaiya, 2016). Considering all the facts of production, the human factor is the most important; hence the growing demand for well-trained craftsmen by industries and also the need to produce technical and vocational education graduates with occupational skills who can be employers of labour and also add to the development of a nation. This has made researchers and policy

makers to evaluate the effectiveness of SIWES programme in Nigeria to ensure quality of Technical and Vocational Education and Training. Okoye and Edokpolor 2021) stated that Agricultural education which is a major component of Technical and Vocational, is a form of education whose primary purpose is to prepare persons for employment in recognized occupation.

The concept of Agricultural education which is an aspect of Technical and Vocational Education and Training is used as an all-embracing term in the educational process involving, in addition to general education, the study of technologies and related sciences and acquisition of practical skills, attitudes, understanding and knowledge relating to occupations in various sectors of economic and social life (Federal government of Nigeria, 2014). Ekezie and Owo (2019) also opined that agricultural education is that type of education that emphasizes the application of skills, knowledge and attitudes required for employment in a particular occupation or cluster of related occupations in any field of agriculture, social and economic activity. The education focuses on, but not limited to study in horticulture, forestry, conservation, natural resources, agricultural products and processing, production of food and fiber, aquaculture and other agricultural products, mechanics, sales and service, economics, marketing, and leadership development of relevance to a general audience. Agricultural education programs assist with providing lifelong learning opportunities in and about agriculture. Agricultural education provides opportunities to learn basic agricultural skills, knowledge, occupation training and retraining; professional growth and development. Education develops in the individual capacities for decision making and the qualities necessary for active and intelligent participation, team work and leadership at work and in the community as a whole and also for the industrial development of the nation. It equips people with a broad range of knowledge, skills and attitudes that are now recognized as indispensable for meaningful participation in work and life (Ayonmike, Okwelle and Okeke, 2015). In line with this, Idoko (2014) explained that acquisition of practical occupational skills involves the development of new skills, practice and ways of doing things or performing a task, usually gained through training or experience, of which SIWES is among.

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 arose as a result of global competitiveness in the industry and also the need to produce graduates of TVET who have the skills needed in the industries in Nigeria and the world at large (Njoku, 2014).

Students' Industrial Work Experience Scheme (SIWES) 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 and 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 students to professional work methods as the scheme acts as a catalyst for industrial growth and productivity through professional development. The Scheme started in 1974 in 11 institutions of higher learning with 748 participants. By 1978, it has widened in scope to about 5,000 participants from 32 different institutions in the country. In 1979 the Industrial Training Fund withdrew from the managing the scheme due to problems of organizational logistics and the increased financial burden as a result of rapid expansion of SIWES (ITF, 2013 in Okoye and Edokpolor, 2021). The scheme is a tripartite programme that incorporates the students, the institutions, and the industries.

In Nigeria SIWES is financed by the federal government through the ministry of commerce and industry and managed by the Industrial Training Fund (ITF). The scheme is aimed at making education more relevant and also to bridge the yawning gap between theory and practice in Agricultural business, Engineering, Technology and other related disciplines in tertiary institutions in Nigeria. The bodies involved in SIWES operation are known as the stakeholders and they are; the Federal Government of Nigeria through the Ministry of Commerce and Industry, Industrial Training Fund, Nigerian University Commission, the institution, the industries or employers and the students. SIWES is a form of cooperative industrial internship programme among all its stake holders. Anyaeneh and Ochuba (2019), stated that all stakeholders are involved in the operation of SIWES but that students are the key actors that are directly involved in its implementation, all other stakeholders have lesser role to play in the actual training process.

It is a three-credit unit course, which must be met by students in Technical and Vocational Education before graduation. Oladimeji, Lawson, Olajide and Akinfiresoye (2017), opined that the scheme is a planned, supervised training and intervention programme based on stated and specific learning and career objectives, leading to the development of occupational competencies of the participants. It also exposes and prepare students in institutions of higher learning for the industrial work situations which they are to meet after graduation. Babalola and Obianeri (2017), defined Industrial Training as that form of educational process provided to students of special skill oriented subjects, to enable them acquire the specific skills and attitude in the subject and also enable them function properly in the occupation when formally employed, and it is done in the real occupational environment. Ayogyam, William, Asaah and Zakari (2017), stressed that the SIWES or Industrial Training is an advance or a more formal form of apprenticeship programme which

is geared towards skill acquisition and development. Meenaloshini, Linder and Zaimah (2014), noted that the programme helps the students to concretize knowledge and enables them to do the work well. Ojokuku, Emeahara, Aboyade and Chris-Israel (2015), opined that SIWES training is like a key factor that enhances efficiency and expertise of the workforce. It assist students gain on-the-job skills required in livestock production that may not be acquired within the school farm (Olumoke, 2017). Further, Wakili and Auru (2018) noted that SIWES is helpful in making technology and vocational education students develop self-confident in the practical aspect of their programme such as machine maintenance and handline, animal and crop production.

Furthermore, Ogbonnaya (2016), stated that most of Nigerian tertiary institutions do not have the necessary equipment and facilities to equip the students with the necessary skills and competencies. Ettah et al (2014) noted that SIWES is the major hope for students acquisition of practical skills in handling and maintenance of farm machines as most universities lack the equipment for training. It is then necessary for schools to link with industries, artisans' workshops where those modern facilities can be found for students to get exposed to real practical activities. It exposes students to best practical skills and expert experiences in crop production (Okoye and Edokpolor (2021). The scheme equally helps to familiarize students with work methods and expose them to the necessary experience to handle equipment and machinery that are not available in their institutions.

SIWES in this context can be defined as a practical training programme organized for the students of tertiary institutions and technical colleges in vocational and technical education department and engineering to enable them acquire practical skills so as to be employable in the labour market and also job creators. The objectives of SIWES as stated by the Industrial Training Fund (2013) in Okoye and Edokpolor (2021) is to: provide an avenue for students in higher institutions of learning to acquire industrial skills and experience in their course of study, prepare student for the industrial work situation they will meet after graduation, expose students to work methods and techniques in handling equipment and machinery that may not be available in their institutions, make the transition from school to the world of work easier and enhance student's contacts for job placement, provide students with an opportunity to apply the knowledge in real work situation to their training thereby bridging the gap between theory and practice and enlist and strengthen employer's involvement in the entire education process and prepare student for employment in industry and commerce.

There has been much concern on the quality of practical experience the students gain on the job market in their industrial attachment which has resulted to unemployment since the objectives of the programme has not been met. The high rate of unemployment among the graduate of agricultural education which is as a result of inadequate skill acquisition and also mismatch of skill from what is happening in industry and also the school have given policy makers a source of concern. This growing impression informs a compelling need to evaluate the effectiveness of SIWES to ensure quality of Technical and Vocational education and training with a view to determining their proficiency so as to acquire practical skills.

Idoko (2014) explained that acquisition of practical skills involves the development of new manipulative and technical ability, practice and way of doing things or performing a task, usually gained through training or experience. From the foregoing, practical skills

development could be referred to as an organized process of training which eventually leads to effectiveness in a given trade. It is an ability to do a given job better and faster with enhanced output. Muhammad and Rufai (2014), were of the view that in the contemporary Nigeria, quality of technical college graduates has been a major source of concern by most employers who express their dissatisfaction on the level of technical skills possessed by these technical graduates. The situation also gave rise to the question as to whether the SIWES is an effective platform for equipping agricultural education students with the competencies and skills 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 impacted on the Agricultural Education graduates who have passed through the programme and have secured employment in agricultural industries and the related fields.

However, the agricultural education students are those who passed through comprehensive studies of learning periods of about three (3) years in higher institutions and have completed the six months SIWES. Since it is assumed that any Agricultural Education student who passed through SIWES should acquire the necessary competencies and skills that will enable him secure and remain in the Agricultural Industry. The extent to which SIWES objectives have been achieved, using agricultural education final year students as a case study is the concern of this study.

Statement of the problem

The primary objective of agricultural education is to foster the acquisition of the necessary agricultural competencies needed to effectively function in the world of work, either as an employee or an employer of labour. In the light of the above, students of agricultural education undergoing SIWES are expected to acquire practical skills in their various disciplines (options).

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. 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 students with the competencies and skills 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 impacted on the Agricultural Education final year students who have passed through the programme and have secured employment in agricultural industries and the related fields; since it is assumed that any Agricultural Education graduate who passed through SIWES should acquire the necessary competencies and skills that will enable him secure and remain in the Agricultural Industry. The extent to which SIWES objectives have been achieved, using agricultural education graduates as a case study is the concern of this study.

Purpose of the study

The purpose of the study is to identify the influence of Students' Industrial Work Experience Scheme (SIWES) on final year Agricultural Education students' skills development in South, South Nigeria. Specifically, the study determined the extent at which;

1. SIWES has enabled Agricultural Education final year students to acquire agricultural experiences and skills required for success in crop production;
2. SIWES has enabled Agricultural Education final years students to acquire experiences and skills required in livestock production
3. SIWES has enabled Agricultural Education final year students to acquire experiences and skills required in handling agricultural equipment,

Research questions

The following research questions guided the study

1. To what extent has SIWES enabled Agricultural Education students to acquired agricultural experiences and skills required for success in crop production?
2. To what extent has SIWES enabled Agricultural Education students to acquire experiences and skills required in livestock production?
3. To what extent has SIWES enabled Agricultural Education students to acquire experiences and skills required in handling agricultural equipment?

Hypotheses

The following hypotheses were formulated to guide the study and were tested at 0.05 level of significance;

Ho_1: There is 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 agricultural experiences and skills required for success in crop production

Ho_2: There is 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 livestock production,

Ho_3: There is 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 handling agricultural equipment,

Methodology

A descriptive survey research design was adopted for the study. 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 on the influence of students' industrial work experience scheme on agricultural education graduates' skills development in South-South Nigeria. The area of the study is in South-South, Nigeria. The South-South (often hyphenated to the South-South) is one of the six geopolitical zones of Nigeria representing both a geographic and political region of the country's eastern coast.

It comprises six states – Akwa Ibom, Bayelsa, Cross River, Delta, Edo, and Rivers**.** The choice of this area among other reasons was because it is a region that explores all avenues to improve academic performance, entrepreneurial development as well as achieve excellence as outlined by National Universities Commission (NUC).

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 Questionnaire (IWESAESSSDQ): 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 6 clusters, 1 to 3 which deals with the actual answers to the research questions. Cluster 1 is on extent Students Industrial Work Experience Scheme (SIWES) has enabled Agricultural Education graduates to acquire agricultural experiences and skills required for success in crop production (10 items), cluster 2 deals with extent SIWES has equipped Agricultural Education graduates with agricultural experiences and skills required for success in livestock enterprises after graduation (10 items), cluster 3 handles extent SIWES has exposed Agricultural Education graduates with agricultural experiences and skills required for success in handling agricultural equipment and machines (10 items). The questionnaire items was 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 valves 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 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. Any item with mean below 2.50 was regarded as disagree or low extent while any item with mean of 2.50 or above was regarded

as agree or high extent. However, the 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	Strongly Agree (SA)/Very High Extent (VHE)	3.50-4.0
3	Agree (A)/High Extent (HE)	2.50-3.49
2	Disagree (D)/Low Extent (LE)	1.50-2.49
1	Strongly disagree (SD)/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.

Results

Research Question 1: To what extent has SIWES enabled Agricultural Education final year students to acquire agricultural experiences and skills required for success in crop production?

Hypothesis 1: There is 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 agricultural experiences and skills required for success in crop production

Table 1: Mean, standard deviation and t-Test Analysis on the extent SIWES has enabled Agricultural Education Graduates to Acquire Agricultural Experiences and Skills required for Success in Crop Production

S/N	Item statements	$\bar{X}_M$	S_M	$\bar{X}_F$	S_F	$\overline{Xg}$	Sg	P-value Sig.	P-value Rmk
1	The graduates can now identify the different soils for cultivation of different soils	2.60	.49	2.67	.47	2.50	.50	.25	HE, NS
2	The graduates can now prepare beds for farming operations	2.66	.48	2.31	.47	2.97	.85	.27	HE, NS
3	The graduates can now identify crop diseases and crop pest	2.91	.75	3.00	.90	2.60	.49	.07	HE, NS
4	The graduates can carry out the different planting operations of crops	2.61	.49	2.59	.49	2.62	.57	.39	HE, NS
5	The graduates control crop diseases using appropriate chemicals	3.12	.33	2.34	.47	3.20	.83	.06	HE, NS
6	The graduates can identify appropriate fertilizer required by different crops	3.21	.80	3.20	.84	3.16	.76	.17	HE, NS
7	The students can mix agrochemicals well	3.10	.74	3.20	.77	3.26	.82	.12	HE, NS
8	The graduates can carry out weeding operations in the farm	3.12	.94	3.34	.74	3.21	.82	.06	HE, NS

9	The graduates can now dig ridges, nursery bed and mounds	3.28	.87	3.17	.80	3.21	.85	.09	HE, NS
10	The graduates now know pesticides to apply to the plant	3.32	.81	3.17	.87	3.26	.82	.10	HE, NS
	Pooled					**2.99**	**.73**		**HE, NS**

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

Data in Table 1 revealed that all the 10 items had their mean ratings ranged from 2.50 to 3.26, which were above the cut-off point of 2.50. This indicates that the respondents agreed in all the items. The pooled mean of 2.22 indicates that SIWES has enabled Agricultural Education final year students to acquire experiences and skills required in crop production to a high extent. The standard deviation of all the 10 items ranged from .49 to .85, which showed that the respondents were not too far from the mean and opinion of one another. The data also shows that all the 10 items had their p-values ranged from .06 to .39 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 Students of agricultural Education on the extent Students Industrial Work Experience Scheme (SIWES) has enabled Agricultural Education styudents to acquire agricultural experiences and skills required for success in crop production.

Research Question 2: To what extent has SIWES enabled Agricultural Education graduates to acquire experiences and skills required in livestock production?

Hypothesis 2: There is 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 livestock production.

Table 2: Mean, standard deviation and t-Test Analysis on the Extent SIWES has Enabled Agricultural Education students to Acquire Experiences and Skills Required in Livestock Production

S/N	Item statements	$\bar{X}_M$	S_M	$\bar{X}_F$	S_F	$\bar{x}g$	*Sg*	Sig.	Rmk
1.	The graduates can now identify the different brood chicks	3.12	.94	3.34	.73	3.11	.80	.70	HE, NS
2.	The graduates now feed livestock with right feeds at the right time	3.20	.86	3.06	.75	3.06	.81	.60	HE, NS
3.	The graduates now know how to prepare and disinfect pens adequately	2.99	.82	3.10	.81	3.08	.82	.71	HE, NS
4.	The graduates now know how to deworm farm animal at the right time with the correct dewormer	3.16	.76	3.00	.78	2.97	.78	.07	HE, NS

5.	The graduates now provide adequate ventilation in farm animal pens	2.93	.79	3.00	.78	3.15	.78	.50	HE, NS
6.	The graduates can now identify and treat the animal when they fall sick	3.51	.60	2.94	.79	3.06	.79	.60	HE, NS
7.	The graduates can now fatten livestock for sale	3.03	.71	3.01	.83	3.17	.81	.90	HE, NS
8.	The graduates can cull animals that are not desirable	3.19	.83	3.16	.80	2.94	.76	.23	HE, NS
9.	The graduates can now predict oestrus in farm animals	2.56	.69	3.16	.75	3.20	.83	.74	HE, NS
10.	The graduates can now formulate different types of feeds for livestock Carryout different management practices	3.21	.80	3.20	.84	2.65	.48	.17	HE, NS
	Pooled					**3.03**	**.76**		**HE, NS**

Keys: $\bar{X}_M$ = Mean of Male students, S_M = Standard deviation of Male students , $\bar{X}_F$ = Mean of Female students , S_M = Standard deviation of Female students, Xg- grand mean, *S*g- grand standard deviation, Sig = Significant value = P≥0.05, S = Significant, NS= Not significant and Rmk = Remark

Data in Table 2 revealed that all the items had their mean ratings ranged from 2.65 to 3.20 and were above the cut-off point of 2.50. This indicates that the respondents agreed to all the items. The pooled mean of 3.03 indicates that SIWES has enabled Agricultural Education final year students to acquire experiences and skills required in livestock production to a high extent. The standard deviation of all the 10 items ranged from .48 to .83, which showed that the respondents were not too far from the mean and opinion of one another in their responses. The data also shows that all the items had their p-values ranged from .07 to .90 and were greater than the alpha-value of 0.05. This implied that there is no significant difference between the mean responses of male and female agricultural education final year students on the extent SIWES has enabled Agricultural Education graduates to acquire experiences and skills required in livestock production. Therefore, the hypothesis no significant difference on the extent SIWES has enabled Agricultural Education students to acquire experiences and skills required in livestock production was not rejected.

Research Question 3: To what extent has SIWES enabled Agricultural Education final year students to acquire experiences and skills required in handling agricultural equipment and machines?

Hypothesis 3: There is no significant difference between the mean responses of male and female agricultural education final year students on the extent SIWES has enabled Agricultural Education students to acquire experiences and skills required in handling agricultural equipment.

Table 3: Mean, Standard Deviation and t-Test Analysis on extent SIWES has enabled Agricultural Education Final Year Students to Acquire Experiences and Skills Required in Handling Agricultural Equipment

S/N	Item statements	$\bar{X}_M$	S_M	$\bar{X}_F$	S_F			P-Value	
						$\bar{x}g$	Sg	Sig.	Rmk
1.	The graduates can now couple plough to tractor	2.60	.49	2.67	.47	2.54	.50	.03	HE, NS
2.	The graduates can now identify, drive and work with tractor in the farm	2.66	.48	2.51	.47	2.97	.85	.27	HE, NS
3.	The graduates can now identify and use knapsack sprayer to spray agrochemicals.	2.91	.76	3.00	.90	2.60	.49	.11	HE, NS
4.	The graduates can now identify and use milking machine to extract milk from cow	2.61	.49	2.59	.49	2.62	.57	.39	HE, NS
5.	The graduates can now cultivate the soil with ridger	3.12	.33	2.53	.47	3.20	.83	.11	HE, NS
6.	The graduates can now harvest crops using harvester	3.21	.80	3.20	.84	3.16	.76	.17	HE, NS
7.	The graduates can now store agricultural tools well after use.	3.10	.74	3.20	.77	3.26	.82	.12	HE, NS
8.	The graduates can now maintain the equipment and machines to prevent damage.	3.12	.94	3.34	.76	3.21	.82	.01	HE, NS
9.	The graduates can now handle incubator for incubating eggs	3.28	.87	3.17	.80	3.21	.85	.01	HE, NS
10.	The graduates can now work with planters on the farm	3.28	.81	3.17	.87	3.26	.82	.10	HE, NS
	Pooled					**3.00**	**.73**		**HE, NS**

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

Data in Table 3 revealed that all the items had their mean ratings ranged from 2.54 to 3.26 and were above the cut-off point of 2.50. This indicates that the respondents agreed in all the items. The pooled mean of 3.00 indicates that SIWES has enabled Agricultural Education final year students to acquire experiences and skills required in handling agricultural equipment and machines to a high extent. The standard deviation of all the 10 items ranged from .49 to .85, which showed that the respondents were not too far from the mean and opinion of one another in their responses. Also the data shows that all the items had their p-values ranged from .01 to .39 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 final year students on the extent SIWES has enabled Agricultural Education students to acquire experiences and skills required in handling agricultural equipment and machines.

Discussion of the findings

The findings of the study in research question 1 revealed that SIWES has influenced agricultural education final year students experiences and skills regarding crop production in 10 ways. This finding is in line with the view of Ugwuoke (2012) who stated that Agricultural Education students undergo compulsory SIWES programme help to bridge the gap between theory and practice as it exist in the World of Work and the programme help to expose the students to the work skills needed in the areas of Crop productions. To Alabi (2016), Student SIWES is designed to exposed students to different occupational skills, so as to enable them acquire the basic employability skills in crop production so as to become self-sufficient.

The findings of the study in research question 2 revealed that SIWES has influenced agricultural education final year students experiences and skills regarding animal production in 10 ways. The findings agrees with Inyiagu (2012) who posits that SIWES is an effort to bridge the gap between theory and practice of engineering, technology, science agriculture, medicine and other industrial related professional educational programme in Nigerian tertiary institutions. The researcher further stated that SIWES enables graduates to acquire technical skill and experience for professional development in their study. Additionally, the findings conformed with the result of Ikukanda, (2013) who posits that SIWES provide students with the opportunity of exposure to enable them acquire prerequisite practical knowledge and skills in livestock production.

The findings of the study in research question 2 revealed that SIWES has influenced agricultural education final year students experiences and skills regarding animal animal production in 10 ways. The finding is in line with the view of Ojokuku *et al.* (2015) who opined that the scheme equally helps to familiarize students with work methods and expose them to the necessary experience to handle equipment and machinery that are not available in their institutions. More so, the findings conforms to Effah *et al.* (2014) who opined that one purpose of industrial training as found in the Ghana experience was to expose trainees to practical skills in their relevant occupational areas and to acquaint them with the functions of new technologies, machines and equipment that they have heard of and read about in books but have not gotten the chance to use them.

Conclusion

Based on the findings of this study, it was concluded that SIWES programme has exposed Agricultural education final years studens to new work methods and experience needed in handling equipment and facilities which are not available in the school but needed to perform certain jobs. Agricultural education students with the help of SIWES were able to bridge the gap between knowledge acquired in the school and the relevant practical skills required in work places. **Recommendations**

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

1) The SIWES coordinators should ensure that emphasis should be focused on providing employability skills in crop production especially in areas of identifying crop diseases and pest, controlling crop diseases using appropriate chemicals and identify appropriate fertilizer required by different crops.

2) The SIWES coordinators should ensure that the coordinators of the farm machinery unit adequately equip the students with the skills to utilize modern farm machinery such as the tractors, incubators, planters, among others. Such an invaluable experience will go a long way in improving their confidence and overall readiness to take up a job in future.
3) Students should be subjected to annual central SIWES examination on practical experience gained after each training period, as organized by the ITF, so as to lift their entrepreneurship spirit.

References

Abraham-Ibe, I.G. (2014). SIWES as an imperative tool for enhancing students' academic performances in OTM department. *International Journal of Management Sciences and Humanities. 3(1), 162-175.*

Alabi, O. O. (2016). Adoption of information and communication technologies (ICTs) by agricultural science and extension teachers in Abuja, Nigeria. *Journal of Agricultural Education*, 57(1), 137-149. doi: 10.5032/jae.2016.01137.

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.

Attah, O. K., Ohanu, I. B. & Nwahunanya, I. (2018). School-Industry activities and administrative link strategies for enhancing students' skill acquisition in Technical Colleges in Enugu State. *Journal of Vocational and Technical Education, Training and Research,* 3 (1) 1-11.

Ayogyam, A., William, A. A., Asaah, J. A. &Zakari, A. (2017). The impact of SIWES on their employability status after graduation: Evidence from Kumasi in Ghana. *International Journal of Advance in Management and Economics*, 1(4), 108-114.

Ayonmike, C. S, Okwelle, P. C.& Okeke, B. C. (2015). Towards quality technical vocational education and training (tvet) programmes in Nigeria: challenges and improvement strategies. *Being a Paper Presented at International Vocational Education and Training Association (IVETA) 2013 Conference on Quality Assurance in Technical-Vocational Education and Training (TVET) on December 3rdand 4thin Las Vegas, Nevada, Georgia USA, 1-29.*

Babalola, A. & Obianeri, R. (2017). Perceptions of Construction Students on Industrial Training in Nigeria. *International Interdisciplinary Journal of Scientific Research*, 3(2), 1-11.

Effah, B., Bomphong, E., Adu, G., Anokye, R. & Asamoah, J. N. (2014). Issues of the industrial training programme of polytechnics in Ghana: the case of Kumasi Polytechnic. *Journal of Education and Practice,* 5(5), 39-46.

Ekezie, A. & Owo, O. (2019). Assessment of Agricultural Education Resources for Vocational Skills Development of Students in Universities in Rivers State, South-South, Nigeria. *International Journal of Educational Research,* 5(6), 1-14.

FRN (2014), *National Policy on Education Lagos*. NERDC Press.

Ibidapo, A. B. (2020). Attitude of students towards industrial work experience scheme. *International Journal of Research and Analytical Reviews*, 7(1), 1-8.

Idoko, C. U. (2014). Skill acquisition and youth empowerment in Nigeria. *Global Journal of Commerce & Management Perspective,* 3(1):51-54.

Industrial training fund (ITF) (2013). *Industrial training fund, students' industrial work experience scheme: Information and guidelines for students' industrial work experience scheme.* Gunda Printing Press. Abuja, Nigeria.

Industrial Training Fund Handbook (2010). Retrieved from www.unirazak.edu.my/pintar/fit/docs/pt-handbook.doc. on 5/11/2011.

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.

Meenaloshini, S., Linder, C. & Zaimah, H. (2014).An analysis on the implementation of Industrial Training for Mechanical Engineering Students in UNITEN. *International Journal of Asian Social Sciences,* 5(4), 664-669.

Njoku, C. A. (2014). *Automation in industry and curriculum review needs of mechanical engineering craft practice students in technical colleges in Lagos State.* An Unpublished M.ED. Thesis University of Nigeria Nsukka.

Ogbonnaya, E. (2016). *Problems militating against the SIWES.* Retrieved June 20, 2016, from www.globalacademicgroup.com/journals/knowledge%20review/Ogbonnaya.pdf

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

Ogundele, I. S., Nwabufo, N. B. & Ademiluyi, L. F. (2022). Students' industrial work experience scheme during corona virus epidemic and students employability skills in universities in north-central and south-western Nigeria. *Al-Hikmah Journal of Business Education*, 2(1), 1-7.

Ojimba, D. P. (2012). Vocational and Technical Education in Nigeria: Issues, Problems and Prospects" Dimensions. *Journal of Education and Social Research, 2(9), 2012.*

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.

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.

Oladimeji A. O., Lawson O. S., Olajide O. G. & Akinfiresoye W. A (2017). Students' Industrial Work Experience Scheme (SIWES), Rufus Giwa Polytechnic Experience, Prospects, Challenges and Improvement. *Journal of Multidisciplinary Engineering Science Studies (JMESS)*, 3(4), 1636-1646.

Olaiya, L.O. (2016). *Students Industrial Work (SIWES).* Guidelines for the Scheme. Isfahan: Kankash Publication.

Olumoko, B. O. (2017). Students' industrial work experience scheme (siwes) as impetus for academic performance in technical and vocational education. *International Journal of Innovative Research and Advanced Studies (IJIRAS)*, 4(7), 1-4.

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.

Wakili, L. M. & Auru, O. H. (2018). Effect of students' industrial work experience scheme on students' readiness for life of work and sustainable development in Nigeria. *World Educators Forum,* 10(1), 1-9.