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# Influence of Students Industrial Work Experience Scheme on Agricultural Education Students' Skill Development in Handling of Agricultural Equipment in South-South Nigeria

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***Abstract***: *The study sought to find out the influence of Student's Industrial Work Experience Scheme (SIWES) on agricultural education students skill development in handling of agricultural equipment in South-South Nigeria using survey research design. 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 was drawn from the total population of 3,603. The instrument for data collection was a self - structured questionnaire titled: Industrial Work Experience Scheme (IWES) on Agricultural Education Students Skills Development in handling of Agricultural Equipment Questionnaire (IWESAESSDHAEQ): 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 and was divided into two clusters. 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 validation by five (5) experts, one (1) from the Unit of Measurement and Evaluation, Department of Science Education, one (1) from SIWES Office in Umuahia and three (3) from the Department of Agricultural/Vocational Education, Michael Okpara University of Agriculture, Umudike. The reliability of the instrument yielded 0.87 using Cronbach alpha coefficient method. Data were collected by the researcher and 10 research assistants who were familiar with area to distribute and receive the questionnaire at the spot from the respondents. 300 copies were retrieved and analyzed using mean and 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 equipment handling and maintenance to high extent. It was further recommended that school management should further tighten their relationship with 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 equipment handling and maintenance as it has been established in this study that is leads to improved skill development.*

***Key words:*** *SIWES, skill development, agricultural equipment and agricultural education students*

## Introduction

The human factor is the most important among all other factors of production hence the growing demand for well-trained craftsmen by industries. This demand also gave rise to the increasing demand 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 is the core mandate of the Students Industrial Work Experience (SIWES).

SIWES 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 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).

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 & 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 & 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 & 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 Agricultural Education before graduation.

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 – 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 is 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. 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 in terms of enabling students acquire the needed skills in farm equipment handing and maintenance.

In most institutions of higher learning, there is inadequate equipment and machines to turnout professionally skilled manpower into the labour market. Ogbu (2015), stated that SIWES provides Agricultural Education students opportunities to familiarize themselves with and expose them to agricultural tools, equipment and machines that were not available in their various institutions but which would be used after graduation. The Scheme expose Agricultural Education students to work methods and prepares them in safeguarding the work area and other workers in the agricultural industry. Ogundele Nwabufo and Ademiluyi (2022 reported that lack of agricultural training facilities and equipment as well as inadequate social support inhibit effective agricultural skill development. The author complained that the agricultural occupational areas are saddled with the problems of insufficient number of relevant tools in good working conditions, insufficient classrooms, workshop materials and machines.

In the 9th Biennial SIWES National Conference reported by ITF (2013) in Okoye and Edokpolor (2021), the conference noted with dismay, the deplorable situation in institutions of higher learning with regards to availability of instructional materials and agricultural equipment for practical training. This deplorable state was due to poor availability of the needed facilities in one hand and the lack of maintenance ability on the side of the workers om another hand. Consequently, the conference resolved that multinational companies should be encouraged to donate agricultural equipment and materials to agricultural institutions of higher learning for Agricultural Education students‟ skills acquisition. This was in realization of the great roles agricultural equipment and materials play in practical skill development of Agricultural Education students.

Fisher *et al*. (2014), reported that visual instruction had become an integral part of every up-to-date educational programme, and used extensively by agricultural industries in teaching students on attachment. Fisher *et al.* (2014), contended that ITF workshop was very specific and practical

in nature. It is therefore, necessary to use supplementary visual aids such as slides, films, charts, models and other concrete objects to actualize the processes of carrying out a particular operation to Agricultural Education students while in the workshop and in agricultural industries. The progressive and alert agricultural training instructors tend to resort to the use of such agricultural teaching aids to effect complete understanding on the part of their trainees. Ajani *et al.* (2015), maintained that a critical assessment of the institutions revealed that some machines supplied by the Federal Government of Nigeria as far back as 1982 to the Colleges were still lying-in crates for lack of workshops to install them. Parts of these machines had depreciated, others had disappeared over night or converted to personal use by domestic thieves. Ajani *et al.* (2015), noted that in some cases, the few agricultural machines available had become too old to be used or broken due to lack of maintenance. This deficiency of agricultural equipment and machines according to the author could be ameliorated by the Agricultural Education students' engagement in SIWES.

On the benefit of SIWES, Anyaeneh and Ochuba (2019), reported that the Scheme enable Agricultural Education students appreciate work methods and gain experience in handling agricultural equipment and machinery which could not be available in their institutions. However, Anyaeneh and Ochuba (2019), noted that some of the employers who accept Agricultural Education students for SIWES were unwilling to allow Agricultural Education students to handle agricultural equipment and machinery because of the fear that students might damage them. The author stressed that such employers should be informed that they were the ultimate beneficiaries of the pool of agricultural technical skills that were available in the economy since they require relevant agricultural production skills for the operation of their non-human resources and therefore should allow agricultural students ample opportunities to manipulate their agricultural equipment and machines. Though, the author noted that the Agricultural Education students should be guided as they were using the agricultural equipment and machines.

Wodi and Dokubo (2019), revealed that agricultural equipment in schools were not found replicating those in the agricultural industry and the school personnel attitude to work did not compare favourably with those of personnel in the agricultural industry. The authors stressed that a situation where Agricultural Education workshop and laboratory equipment in schools were ill-maintained or not replaced for years with modern outfit does not augur well for the development of Agricultural Education. However, the authors contended that the ill-maintained agricultural facilities should be compensated by SIWES through the training of Agricultural Education students with modern agricultural equipment as they exist in agricultural industries.

The exposure of Agricultural Education students to agricultural industrial equipment and machines by SIWES would help to boost the agricultural technical know-how of the graduates in the agricultural enterprise. The Scheme would help Agricultural Education graduates to be acquainted with the methods and techniques of using the agricultural machines so that after graduation and employment in agricultural industry, the use of the agricultural machines would be easy.

**Statement of the problem**

Ideally, agricultural education should foster the acquisition of the necessary agricultural competencies needed to effectively function in the world of work including handling of farm machines. It was 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 with the aim is to help the students achieve their set goals and becoming competent in farm machine handling as a source of employment.

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 including inability of the students who have passed through SIWES to handle and maintain farm machines. 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 competencies and skills they so much require in equipment handling and maintenance. 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.

**Purpose of the study**

The main purpose of the study is to ascertain the influence of SIWES on Agricultural Education students' acquisition of skills in farm equipment handling. Specifically, the study tends to

1. ascertain the extent at which SIWES has improved agricultural education students' skill development in agricultural equipment handling
2. ascertain the extent at which SIWES has improved agricultural education students' skill development in agricultural equipment maintenance

**Research questions**

The following research questions were answered for the study

1. To what extent has SIWES improved agricultural education students' skill development in agricultural equipment handling
2. To what extent has SIWES improved agricultural education students' skill development in agricultural equipment maintenance.

**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 farm equipment handling
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 farm equipment maintenance

**Methodology**

The study adopted survey research design. This design 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 Handling of Agricultural Equipment Questionnaire (IWESAESSDHAEQ): 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 farm equipment handling (10 items), cluster 2 deals the extent Students Industrial Work Experience Scheme (SIWES) has improved Agricultural Education students skills development in farm machines maintenance (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 validattion 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 hypotheses 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.

**Research question 1:** To what extent has SIWES improved agricultural education students skill development in field farm equipment handling?

**Hypothesis 1:** 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 farm equipment handling

**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 farm equipment handling**

| S/N | Item statements | $\bar{X}_M$ | $S_M$ | $\bar{X}_F$ | $S_F$ | p-value. | Rmk |
|---|---|---|---|---|---|---|---|
| 1. | The graduates can now couple plough to tractor | 2.92 | 0.98 | 2.86 | 1.04 | 0.65 | HE, NS |
| 2. | The graduates can now identify, drive and work with tractor in the farm | 2.90 | 0.99 | 2.84 | 0.93 | 0.69 | HE, NS |
| 3. | The graduates can now identify and use knapsack sprayer to spray agrochemicals. | 2.86 | 0.93 | 2.83 | 0.99 | 0.28 | HE, NS |
| 4. | The graduates can now identify and use milking machine to extract milk from cow | 2.98 | 1.03 | 2.88 | 0.89 | 0.25 | HE, NS |
| 5. | The graduates can now cultivate the soil with ridger | 2.96 | 0.87 | 2.91 | 0.96 | 0.02 | HE, NS |
| 6. | The graduates can now harvest crops using harvester | 3.03 | 0.90 | 3.02 | 0.97 | 0.88 | HE, NS |
| 7. | The graduates can now store agricultural tools well after use. | 3.00 | 0.89 | 2.97 | 0.89 | 0.28 | HE, NS |
| 8. | The graduates can now maintain the equipment and machines to prevent damage. | 2.96 | 0.99 | 2.90 | 0.99 | 0.09 | HE, NS |
| 9. | The graduates can now handle incubator for incubating eggs | 3.05 | 0.91 | 2.97 | 0.97 | 0.00 | HE, NS |
| 10. | The graduates can now work with planters on the farm | 2.98 | 0.83 | 2.93 | 1.06 | 0.00 | HE, NS |

$\bar{X}_M$ = 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, Sig = Significant value = P≥0.05, S = Significant, NS= Not significant, HE-high extent and Rmk = Remark

Data in Table 1 revealed that all the items on the extent SIWES has enabled Agricultural Education students to acquire experiences and skills required in handling agricultural equipment and machines had their mean responses ranged from 2.84 to 3.02 which fall within the real limit of number range of 2.50- 3.49. This indicated that the respondents agreed that SIWES improved Agricultural Education students skills development in handling agricultural equipment and machines to a high extent. The standard deviation of all the 10 items ranged from .89 to 1.01, which showed that the respondents were not too far from the mean and opinion of one another in their responses on the extent SIWES enabled Agricultural Education students develop skill in handling agricultural equipment and machines.

More so, data in Table 1 revealed that item 1, 2, 3,4,6,7, and 8 had their p-values ranged from 0.09 to 0.88 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 students develop skills required in handling agricultural equipment and machines 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 improved Agricultural Education students skills development in handling agricultural equipment and machines was not rejected on these items.

The data also showed that item 4, 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 agricultural education graduates on the extent SIWES has improved Agricultural Education students experiences and skills in handling agricultural equipment and machines on those items. Therefore, the hypothesis of no significant difference in the mean responses of the two groups of respondents was not upheld for these items.

**Research question 2:** To what extent has SIWES improved agricultural education students skill development in farm equipment maintenance?

**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 farm equipment maintenance

**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 farm equipment maintenance**

| S/N | Item statements | $\bar{X}_M$ | $S_M$ | $\bar{X}_F$ | $S_F$ | p-value. | Rmk |
|---|---|---|---|---|---|---|---|
| 1. | The graduates can now apply routine maintenance practices such as greasing of joints, oiling, cleaning and others on tractor | 2.92 | 0.98 | 2.86 | 1.04 | 0.65 | HE, NS |
| 2. | The graduates can now predict faults on the farm machines before they manifest | 2.90 | 0.99 | 2.84 | 0.93 | 0.69 | HE, NS |
| 3. | The graduates can now maintain knapsack sprayer appropriately after use. | 2.86 | 0.93 | 2.83 | 0.99 | 0.28 | HE, NS |
| 4. | The graduates can now clean and store milking machine after use | 2.98 | 1.03 | 2.88 | 0.89 | 0.25 | HE, NS |
| 5. | The graduates can now determine when to change oil on farm machines based on number of hours in use | 2.96 | 0.87 | 2.91 | 0.96 | 0.02 | HE, NS |
| 6. | The graduates can now check all hitches and tires and identify faults by themselves | 3.03 | 0.90 | 3.02 | 0.97 | 0.88 | HE, NS |
| 7. | The graduates can now store agricultural tools well after use. | 3.00 | 0.89 | 2.97 | 0.89 | 0.28 | HE, NS |
| 8. | The graduates can now maintain the equipment and machines to prevent damage using the respective machine manual. | 2.96 | 0.99 | 2.90 | 0.99 | 0.09 | HE, NS |
| 9. | The graduates can now keep all documents of the machines organized for quick reference when need be | 3.05 | 0.91 | 2.97 | 0.97 | 0.00 | HE, NS |
| 10. | The graduates can now tight and loosen bolts after use according the maintenance manual of the machine | 2.98 | 0.83 | 2.93 | 1.06 | 0.00 | HE, NS |

$\bar{X}_M$ = 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, 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 items on the extent SIWES have enabled Agricultural Education students to acquire experiences and skills required in maintaining agricultural

equipment and machines had their mean responses ranged from 2.84 to 3.02 which fall within the real limit of number range of 2.50- 3.49. This indicated that the respondents agreed that SIWES improved Agricultural Education student's experiences and skills in maintaining agricultural equipment and machines to a high extent. The standard deviation of all the 10 items ranged from .89 to 1.01, which showed that the respondents were not too far from the mean and opinion of one another in their responses on the extent SIWES improved Agricultural Education students' experiences and skills development in maintaining agricultural equipment and machines.

Data in Table 2 revealed that item 1, 2, 3,4,6,7, and 8 had their p-values ranged from 0.09 to 0.88 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 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 improved Agricultural Education students to experiences and skills development in maintaining agricultural equipment and machines was not rejected on these items.

The data also showed that item 4, 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 agricultural education students on the extent SIWES has improved Agricultural Education students' experiences and skills in maintaining agricultural equipment and machines on those items.

**Discussion of the findings**

The findings of the study in research question 1 revealed that SIWES have improved agricultural education students' skill development in equipment handling to a high extent. This finding is in keeping with Idoko (2014) who noted that SIWES greatly helped students in acquisition of practical occupational skills involved in the development of new skills, practice and ways of doing things such as handling of farm machines. In line with the findings of the study also, Anyaeneh and Ochuba (2019) found that SIWES enable Agricultural Education students appreciate work methods and gain experience in handling agricultural equipment and machinery which could not be available in their institutions.

The findings of the study in research question 2 revealed that SIWES have improved agricultural education students skill development in equipment maintenance to a high extent. This finding is in keeping with Wodi and Dokubo (2019) who stressed that a prior to SIWES, Agricultural Education workshop and laboratory equipment in schools were ill-maintained by the students and this does not augur well for the development of Agricultural Education. Anyaeneh and Ochuba (2019) further noted in line with this study that the ill-maintained agricultural facilities is compensated by SIWES through the training of Agricultural Education students with modern agricultural equipment as they exist in agricultural industries.

**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 equipment handling and maintenance to high extent.

## Recommendations

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

1. School management should further tighten their relationship with 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 equipment handling and maintenance as it has been established in this study that is leads to improved skill development.

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