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# Challenges and Alternative Program to Students Industrial Work Experience Scheme in Nigeria

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## Abstract

Acquisition of industrial skills from Students Industrial Work Experience Scheme (SIWES) has been hindered by implementation challenges. Although institution-based skill development program can provide students with adequate industrial skills and overcome the aforementioned challenges, such program is yet to be fully integrated in curricula of tertiary education in Nigeria. The aim of this study is to determine the challenges of SIWES and an alternative program for industrial skills acquisition for Nigeria students. Survey method was adopted for the study and the study was conducted in the first half of 2026. Purposive sampling technique was used for sampling. The sample for the study was 124 institution-based supervisors from various faculties in 12 Federal and State institutions of higher learning across the 6 geo-political zones of Nigeria. Expert validated structured questionnaire was used for data collection and was administered through physical and online means. Stata software was used for analyzing data generated from the study. The research findings showed that SIWES is challenged by lack of place of attachment, inadequate participation, training, and supervision, poor and irregular payment of supervision allowance, and trainees' allowance for a corresponding number of 115(92.74%), 104(83.87%), 77(62.10%), 84(67.74%), 110(88.71%) and 102(82.26%). The findings also showed that institution-based skill development program is the alternative industrial skill acquisition program for Nigerian students. The authors recommended that Nigerian tertiary education stakeholders should adopt institution-based skill development program as an alternative to SIWES in order to provide students with adequate industrial skills.

**Keywords:** *SIWES, Training, Industrial skill, Challenges, Development program*

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**Background of the Study**

The curricula for tertiary education in Nigeria are designed to enable students acquire higher order skills such as critical thinking, creativity and problem-solving skills (Ezetoha & Okechukwu, 2016). These curricula have components such as lectures for learning theory, entrepreneurship studies, practical, field work, Students Industrial Work Experience Scheme (SIWES), project and seminar integrated in them. The curricula for Engineering, Technology and Vocational courses are implemented through the educational system and non-formal educational approach such as the SIWES (Industrial Training Fund [ITF], 1990; Ezetoha & Okoli, 2025). This approach facilitates acquisition and development of knowledge, skills and capabilities.

Furthermore, the federal government of Nigerian established SIWES through the Industrial Training Fund (ITF) in 1973 to acquaint students of science, engineering, technology and vocational education with industrial skills and experience necessary for gaining employment or being self-employed (Babalola & Tiamiyu, 2013; SIWES, 2024). Prior to establishment of the scheme, there was a growing concern that Nigerian graduates lacked adequate practical knowledge needed for employment (Aderonke, 2012). In addition, most Nigerian educational institutions of learning do not provide their students with adequate skills training that will help them fit for productive work (Ezetoha & Okoli, 2025), supporting establishment of SIWES. However, graduate unemployment rate in Nigeria remains high as fresh graduates pass out from their various institutions (Anah et al., 2016; Ojekunle, 2021), affecting youths mostly. A report by National Bureau of Statistics (NBS) revealed that over 1.7 million graduates enter the labour market annually and youth unemployment remains alarmingly high, with nearly 80 million young people, about 53% of the youth population unemployed as at 2025 (Eboesomi, 2025). The causes of high unemployment rate include lack of skills suitable for job area (mismatched skills) and employability skills (industrial skills) and lack of work experience (Adio-Adepoju, 2024).

Moreover, industrial training of students of institutions of higher learning has been applied successfully as far back as 1980s by many Countries of the world including United State and Germany (Ezetoha & Okoli, 2025) to achieve the self-reliance and full employment goals. However, the prevalence of the inability of Nigerian graduates who were expected to have participated in SIWES to secure employment raises question on whether the scheme is effectively implemented and still has relevance to the contemporary industrial development drive in Nigeria. Studies (Agbonghale & Iserameiya, 2017; Atakpa, 2017; Mohammed, 2023; Ogbonnaya, 2021; Ogbuanya et al., 2018; Pitan, 2016) have revealed that SIWES is challenged by inadequate implementation and this hinders proper acquisition of industrial skills by students. The challenges include lack of place of attachment, inadequate training and supervision of students, none or partial use of job specifications, none and partial participation of students, and poor and irregular payment of allowances amongst others. Large number of Nigerian students who are qualify for SIWES yearly do not participate while many participate partially due to lack and late securement of training place, resulting in non- or poor acquisition of industrial skills and increase in unemployment rate (Ezetoha & Okoli,

2025). There is therefore, an urgent need for an alternative program or training that cannot be affected by the implementation challenges of SIWES for industrial skill acquisition in Nigerian.

**Objectives of the Study**

The objectives of the study are as follows:

1. To determine the current challenges of SIWES in Nigeria.
2. To determine an alternative industrial skill acquisition program for Nigerian students.

**Research Questions**

The following research questions were formulated from the research objectives:

1. What are the current challenges of SIWES in Nigeria?
2. What is the alternative industrial skill acquisition program for Nigerian students?

**Literature Review**

**Students Industrial Work Experience Scheme**

The SIWES is a skills training program (non-formal education activity) designed to expose and prepare students of higher institutions (Universities, Polytechnics, Colleges of Technology, Colleges of Agriculture and Colleges of Education) in Nigeria for the industrial work situation they are likely to meet after graduation (Okorie, 2001; SIWES, 2024). The scheme is implemented through industrial attachment and training. The main goal of SIWES is to provide avenue for students in institutions of higher learning to acquire industrial skills and experience in their course of study. Industrial skills are the practical, technical, and safety-focused abilities needed in manufacturing, production, trades, and industrial engineering settings. The SIWES is aimed at harmonizing the theoretical knowledge obtained in the classroom with practical experience (Ogbonnaya, 2021).

The scheme also provides students with an opportunity to apply their knowledge in real work situation thereby bridging the gap between theory and practice (Ezetoha & Okoli, 2025). The SIWES was initiated, designed and introduced in 1973 by Industrial Training Fund (ITF, 1990). There was a growing concern that graduates of institutions of higher learning in Nigeria lacked adequate practical knowledge needed for employment prior to establishment of the scheme, (Aderonke, 2012). The ITF solely funded the scheme during its formative years with the funding borne by the Federal Government (SIWES, 2024).

Currently, SIWES is managed by Federal Government of Nigeria, ITF, National Universities Commission (NUC), National Board for Technical Education (NBTE), National Commission for Colleges of Education (NCCE), Institute of Higher Learning and the employers of labour. The Federal Government of Nigeria provides funds to ITF for the Scheme (ITF, 1990) and makes it mandatory for all ministries, companies and organizations to offer places for the attachment of students in accordance with the provision of Decree No. 47 of 1979 as amended in 2011. On the other hand, the ITF oversees the SIWES (formulate policies and guidelines, involve in organizing orientation programmes, biennial national

conference and review meetings, supervises and monitors students on IT, disburses supervisory and students' allowances by e-payment and provides logistics and materials necessary for effective administration of the scheme).

The NUC, NBTE and NCCE, are the supervisory agencies, ensuring the establishment, accreditation, funding and supervision of SIWES units in institutions under their jurisdiction. They develop, monitor and review job-specifications in collaboration with the institutions. In addition, each institution of higher learning establishes SIWES co-ordination units with a separate account, adequately staffed and funded to ensure effective operation of the scheme (SIWES, 2024). The institution oversees the registration of students for SIWES, prepares and submits to the ITF copy of master lists and placement lists 3 months before the commencement of industrial attachment. The institution applies job-specifications and award appropriate credit units in accordance with the Federal Government Minimum Academic Standard guidelines, supervises students at their places of attachment and signs their logbooks. The institution also organizes orientation courses in collaboration with the ITF for their students and submit all completed ITF Form 8 to the nearest ITF area office. On the other hand, the employers of labour are responsible for accepting and training students with their facilities. They collaborate with institutions of higher learning in the preparation of job specification for approval courses, provide welfare services to IT students, and participate fully in the assessment of programmes and students.

The SIWES is compulsory for courses in Engineering and Technology; including Environmental Studies and other courses that may be approved (Aderonke, 2012). The SIWES is also compulsory for courses in colleges of education including NCE Technical, Business, Agriculture, Home Economics, Creative Arts and Design and Computer Education are also included in the funding. The IT takes place at the end of a specified section or sections, lasing between 4-12 months depending on the type of institution (university, polytechnic or colleges of education). The students on attachment are to be visited by their institution-based supervisors and the staff of the ITF at least two times during attachment. In addition, the IT students and the institution-based supervisors are entitled to allowance. The allowance approved for each IT student by the federal government as at 2024 is two thousand five hundred naira (₦2,500) per month while allowance for institutions supervisory is two hundred and fifty naira (₦250) per student per month (SIWES, 2024).

**Review on Challenges of SIWES**

Olabiyi et al. (2012) identified mismatch between the curriculum contents and IT experience, denial of IT students opportunities to operate modern tools and equipment, rejection of students by industries, inadequate IT period, feeling of insecurity by students in the place of attachment, lack of incentives (monetary) for both staff and IT students during training, improper placement and inadequate assessment and supervision of IT students as challenges of SIWES in developing workforce among youths in Nigeria. In a similar work, Atakpa (2017) identified poorly matched placement, frequent rejection of students by employer, little or no financial motivation, denial of IT students accesses to use equipment,

poor supervision of students, lack of necessary tools and failure of the institutions to handover job specifications of SIWES students to industry-based supervisors as challenges encountered by students during SIWES. In another work, Ogbuanya et al. (2018) identified difficulty in getting a rightful organization for IT, lack of adequate financial motivation for students and supervisors, and inadequate training facilities amongst others as the challenges of SIWES in vocational and technology education.

In a recent study, Ogbonnaya (2021) identified improper compilation of students master and placement lists, inadequate supervision, unwillingness of organizations to take students for training, lack of accommodation for trainees, unfriendly attitude of workers, inadequate orientation of students and the attitude of students towards industrial training as the challenges of SIWES. In another recent work, Mohammed (2023) identified poor orientation and supervision, wrong placement, non-cooperation of some industrial workers, and non-seriousness on the part of students as the major problems militating against the scheme. In a more recent work, Ezetoha and Okoli (2025) identified lack of place of attachment, inadequate training and supervision of students, none or partial use of job specifications, none and partial participation of students, poor and irregular payment of allowances to beneficiaries as the major challenges faced by the scheme.

The works reviewed investigated the challenges of SIWES and made suggestions on how to overcome the challenges. None of the works investigated the alternative program to SIWES. In order to fill this gap, the present study investigates the effective, alternative industrial skill acquisition program for Nigerian students in addition to current challenges of SIWES.

**Methodology**

Survey design was used for investigating the research problem. Survey was used because it tries to find answer to a question through analysis of quantitative data. The study was conducted in the second quarter of 2026.

**Sampling Technique**

Purposive sampling technique was used for this study.

**Sample:** The sample for the study was 124 institution-based supervisors from various faculties in 12 federal/state institutions of higher learning in Nigeria. At least one institution was selected from each of the six geo-political zones of Nigeria and at least two institutions were selected from each type of higher institution (University, Polytechnic and College of Education) used in this study. The institutions were Nnamdi Azikiwe University Awka in Anambra State, Federal University of Technology Owerri in Imo State, Rivers State University, University of Ibadan in Oyo State, University of Lagos, University of Jos in Platue State, Federal Polytechnic Oko in Anambra State, Kaduna Polytechnic in Kaduna State, Federal Polytechnic Bauchi in Bauchi State, Federal Polytechnic Idah in Kogi State, Federal College of Education (Technical) Umunze in Anambra State and Enugu State college of Education (Technical) in Enugu State.

The original sample size for the study was 160 but only 124 favorable responses out of the 160 were obtained.

**Data Collection**
Structured questionnaire was used for data collection. The questionnaire consists of three parts. Section **A** measure the respondents' demographic characteristics such as educational qualification, institution and faculty. Section **B** was designed to measure the challenges of SIWES in Nigeria. This section comprised 6 items. Section **C** was designed to measure the alternative industrial skill acquisition program for Nigerian students and it comprised of 2 items. The scale, whereby disagree and agree are response options, was used.

The instrument was validated by four experts; three institution-based supervisors (one from university, one from polytechnic and one from college of education in Anambra State used in the study), and one ITF official before administering. Cronbach Alpha method was used to establish the internal consistency of the items. In order to determine the internal consistency and stability (reliability) of the instrument, 20 copies of the instrument were administered to institution-based supervisors in University of Nigeria Nsukka in Enugu State who were not part of the sample. The reason was to achieve reliable data for determining the internal consistency of the questionnaire items. The instrument has reliability coefficient of 0.82.

The instrument was administered through physical and online means. The questionnaire was administered to the institution-based SIWES supervisors in South East Nigeria physically by the researchers with the help of research assistants while online platforms were used to administer the questionnaire to supervisors in other geo-political zones of Nigeria.

**Data analysis**
The data generated from the study were entered through Epi Info Version 6 and analyzed using Stata Software.

**Results**
**General and demographic characteristic**
The study involved a total of 124 institution-based SIWES supervisors. The target was to reach 160 who were qualified to take part in the investigation. However, it was not possible to reach 100% coverage of the target sample because some of the supervisors did not send filled questionnaire to the researchers online. Among the respondents, 56(45.16%) were from university while 45(36.29%) were from Polytechnic and 23(18.55%) were from College of Education. Table I shows the distribution of the respondents by type of higher institution.

**Table I:** Distribution of respondents by type of higher institution

| Institution | No of respondents | Percentage No of respondents |
|---|---|---|
| University | 56 | 45.16% |
| Polytechnic | 45 | 36.29% |
| College of Education | 23 | 18.55% |

**Findings on Current Challenges of SIWES**

The findings of this study showed that majority of the respondents agreed that all the variables used in the study are challenges facing SIWES in Nigeria. The respondents agreed that lack of place of attachment, none/partial participation of students, inadequate training, inadequate supervision of students, poor and irregular payment of supervision allowance, and poor and late payment of IT student's monthly allowance affects SIWES in Nigeria for a corresponding number of 115(92.74%), 104(83.87%), 77(62.10%), 84 (67.74%), 110(88.71%) and 102(82.26%). The findings are shown in figure I.

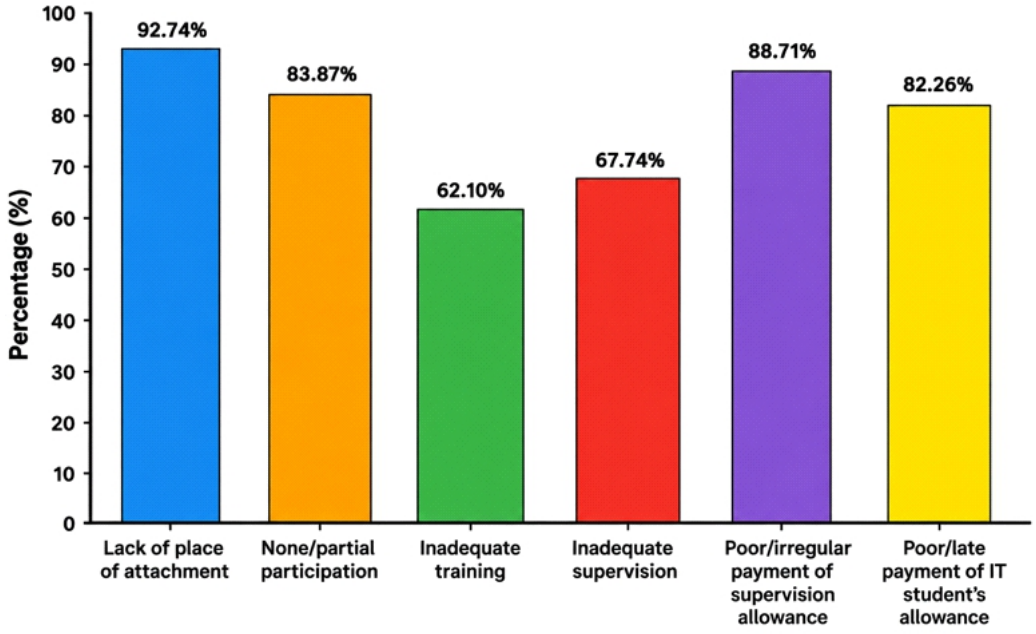


**Figure I:** Challenges facing SIWES in Nigeria

**Findings on the Alternative Industrial Skill Acquisition Program**

The findings of this study showed that 88(70.97%) respondents agreed that institution-based skill development program is the effective, alternative industrial skill acquisition program for Nigerian students while 36(29.03) disagreed. The findings also showed that 46(37.10%) agreed that online industrial skill training is the alternative industrial skill acquisition program for Nigerian students while 78(62.90) disagreed.

**Discussion**

The study tried to determine and analyze the challenges of SIWES in Nigerian by using survey design. Institution-based supervisors (lecturers) who supervise IT students were selected for this study because they are the most qualified people to give account of the SIWES. Federal and state universities, polytechnics and colleges of education were selected for the study because they are the institution whose students are mainly involved in SIWES. Again, 12 institutions of higher learning were selected across the 6 geo-political zones in Nigeria so as to obtain results reflecting national character.

**Research Question One:** What are the current challenges of SIWES in Nigeria?

The findings on the challenges of the SIWES reveal that students encounter several difficulties during their industrial training. These challenges include a lack of placement opportunities, inadequate participation, insufficient training and supervision, and problems associated with the payment of allowances.

The most prominent challenge was lack of place of attachment (92.74%), indicating that the majority of respondents identified difficulty in securing suitable IT placements as a major obstacle to effective implementation of SIWES. Companies, including multi-national companies, factories and institutions where IT take place are struggling to survive the harsh economic condition of Nigeria (Chukwumah et al., 2024) and they find it difficult to accept IT students. This has contributed to lack of place of attachment for IT. On the other hand, increasing number of students in Nigeria's institutions of higher learning contributes to lack of place of attachment (Aderonke, 2012). Lack of place of attachment may limit students' access to relevant practical experience and delay their participation in the programme. Studies (Atakpa, 2017; Ogbonnaya, 2021; Ogbuanya et al., 2018) confirmed that lack of place of attachment is a major challenge to SIWES.

The second most prominent challenge was poor and irregular payment of supervision allowance (88.71%). This suggests that financial difficulties associated with supervision may affect the regularity and effectiveness of supervisory visits. The supervision allowance per IT student is two hundred and fifty naira (₦250). This amount is inadequate for transporting the institution-based supervisor to place of student's attachment two times as stipulated by ITF. Often, there are delays in payment of supervision allowance and this can hinder proper supervision. Studies Atakpa (2017), Ogbonnaya (2021), Olabiyi et al. (2012) confirmed that poor and irregular payment of supervision allowance affects SIWES negatively.

The third most prominent challenge was none or partial participation (83.87%). This suggests that some stakeholders may not participate fully in the implementation of SIWES. Many students do not participate in IT because of lack of place of attachment (Agbonghale & Iserameiya, 2017; Ogbuanya et al., 2018), finance and poor supervision of the scheme (Ezetoha & Okechukwu, 2016). Many students do not start training in time due to difficulty in securing IT placement and disruption in academic calendar, leading to inadequate participation.

Furthermore, poor or late payment of IT students' allowances (82.26%) was reported by a substantial proportion of respondents. The student's IT allowances is two thousand five hundred naira (₦2,500) per month and this allowance is paid at the end of training or after many years instead of monthly (Ezetoha & Okoli, 2025). With the current economic condition in the nation, this allowance is inadequate and needs to be reviewed. Inadequate and delays in payment of students' allowances may create financial difficulties for students, particularly those who need to cover transportation, accommodation and feeding expenses during their industrial attachment, discouraging them from participating and being serious with the scheme. Studies (Ezetoha & Okoli, 2025; Mohammed, 2023; Ogbonnaya, 2021) confirmed that none and inadequate payment of IT student's allowance affects SIWES negatively.

The findings also show that inadequate supervision (67.74%) remains a considerable challenge. Effective supervision is important for monitoring students' progress, ensuring that assigned tasks are relevant to their fields of study, and providing guidance when difficulties arise. Studies (Ezetoha & Okoli, 2025; Mohammed, 2023) have revealed that some institution-based supervisors and industrial-based supervisors do not supervise students properly during IT. This may be due to lack of incentives/allowance since non-payment of allowance to trainer and supervisor may cause them have negative attitude towards executing their job. Studies (Atakpa, 2017; Ogbonnaya, 2021; Olabiyi et al., 2012) confirmed that SIWES is faced by improper, inadequate and inefficient supervision.

In addition, inadequate training (62.10%) was reported as a challenge, indicating that some students may not receive sufficient practical instruction or exposure to the skills required in their respective disciplines. Some organizations where IT take place do not have adequate training facilities (Agbonghale & Iserameiya, 2017; Ogbuanya et al., 2018) while some deny IT students opportunities to operate modern tools and equipment (Ezetoha & Okoli, 2025), causing inadequate training of IT students. Disruptions in academic calendar due to strikes embarked by academic staffs of tertiary institutions in Nigeria result in inadequate training of IT students as they cause shortage of IT period (Olabiyi et al., 2012). In addition, none or partial use of job specifications for training students on IT as reported by Atakpa (2017) and Ezetoha and Okoli (2025), results in inadequate training.

**Research Question Two:** What is the alternative industrial skill acquisition program for Nigerian students?

The findings on the alternative industrial skill acquisition program for Nigerian students reveal that only one out of the two programs assessed can provide students with adequate industrial skills. The program was institution-based skill development program (70.97%), indicating that the majority of respondents identified the program as effective for acquiring industrial skills. Institution-based skill development program provides the avenue for students to acquire technical skills (skills that enables one operate machinery, use specialized tools, read blueprints, and perform basic equipment maintenance), soft skills

(communication, teamwork and time management skills), problem solving skill and safety awareness and certification (Scope Global Skills University, 2024). Skill development programs have been integrated in some tertiary education in India and have been enhancing students' practical skills and employability (Dinhata College, 2026; Scope Global Skills University 2024). Skill development programs are currently being integrated in the curricula used in Federal Polytechnic Oko, Anambra State. In addition, institution-based skill development program cannot be affected by challenges like lack of place of attachment, none/partial participation of students, inadequate training, inadequate supervision of students and poor and irregular payment of supervision allowance faced by SIWES (Ezetoha & Okoli, 2025). This shows that institution-based skill development program is an effective program or training for industrial skill acquisition in Nigeria.

On the other hand, online industrial skill training (37.10%) was reported as a program that does not provide students with adequate industrial skills. Although industrial skill-based training in online setting can provide the avenue for students to acquire skills such as industrial skills and experience in their course of study (Batita et al., 2023) and partially overcome the challenges of SIWES, acquisition of technical skills will be difficult as the training does not provide physical environment to practice what is learnt online. In addition, cost of running online program may pose problem to students. This shows that online industrial skill training is not effective and not an alternative program for students' industrial skill acquisition in Nigeria.

**Implication of the Study**

The findings of this study imply that SIWES is currently facing implementation challenges and institution-based skill development program is an effective, alternative program or training for industrial skill acquisition in Nigeria.

**Conclusion**

This study has established through survey method that SIWES is challenged by lack of place of attachment, inadequate training and supervision of students, none and partial participation of students, poor and irregular payment of supervision allowance and inadequate and late payment of IT student's monthly allowance.

This study has also established that institution-based skill development program is an effective, alternative program or training for industrial skill acquisition in Nigeria.

**Recommendations**

1. The main limitation of this study is focus of the study on 124 institution-based supervisors from only 12 public institutions of higher learning in Nigeria. It is necessary to increase the sample size and involve supervisors from private institutions of higher learning in Nigeria since the views and needs of participants at other institutions may be different.
2. Further research should be conducted in this area to explore the impact of institution-

based skill development program on industrial skill acquisition by Nigerian students.

3. It is recommended that institution-based skill development program should be adopted as an alternative to SIWES in Nigeria since it provides adequate industrial skill and not affected by main challenges of SIWES.

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