

Students' Industrial Work Experience Scheme and Quantity Surveying Students' Professional Development in Nigeria

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Abstract

The present day workplace dynamics required that students of universities and other tertiary institutions acquired occupational competencies before graduation. This study aims at examining the relevance of students' industrial work experience scheme (SIWE) on professional development of quantity surveying students in Nigeria. This study adopted the mixed methods research approach that involves collecting quantitative and qualitative data through the use of questionnaire and interviews. The numeric data were analysed using Excel Microsoft spreadsheet and the Statistical Package for Social Science (SPSS), whereas the textual data were analysed thematically. The findings from the questionnaire survey indicated that SIWES exposed students to new work methods, workplace ethics and use of ICT quantity surveying packages (Autocard, Master Bill, WinQs, QSlotus, CATO, and Estimator Pro.MB) that were not available in the institution. However, during the interviews sessions, some of the students expressed problems confronting SIWES operation in Nigeria such as non-payment of allowances and getting placements, irregular visit from the institution and inadequate supervision by the industrial based supervisor. Furthermore, it was found that students were not showing seriousness and commitment towards the scheme. The study therefore, recommends that federal government, institutions and students should take the scheme serious in order to achieve its stated objectives.

Keywords: Professional development, quantity surveying, SIWES, Nigeria

Introduction

According to Mafe (2010) and Daramola (2015) education and training is a fulcrum for national growth and sustainable development. Kim (2019) maintains that vibrant and qualitative Engineering and Built environment Education that builds on practical know-how is fundamental to the sustainability of technological growth and national development. Mafe (2010) opined that there exists synergy between education and training. Therefore, the need to leverage the gap between theory and practice among students called for the introduction of Student Industrial Work Experience Scheme (SIWES) into the Nigerian educational curriculum. According to Eze (2013), the Industrial Training Fund (ITF) policy of No. 1, 1973 established SIWES to equip students with technical skills, and competencies necessary for industrial work after graduation. The initial objective of this noble scheme by the Federal Government of Nigeria was meant to familiarize students of the Universities and other tertiary institutions studying courses related to engineering, built environment, sciences and technology with the industrial work methods and techniques (Industrial Training and Fund (ITF, 2013).

The SIWES is a skills training programme designed to expose and prepare students of universities and other tertiary institutions for the industrial work situation they are likely to meet

after graduation (Mefe, 2010; Eze, 2013). It is also a planned and structured programme based on stated and specific career objectives which are geared towards developing the occupational competencies of participants (Mafe, 2010; Eze, 2013; Daramola, 2015).

The scheme is a tripartite programme involving the students, the universities and the employers of labour. It is funded by the Federal Government and jointly coordinated by the Industrial Training Fund (ITF) and the National Universities Commission (NUC), National Board of Technical Education (NBTE), National Council on Colleges of Education (NCCE) with the following objectives (ITF, 2013):

1. To provide an avenue for students in the Nigerian universities and other tertiary institutions to acquire industrial skills and experience during their course of study;
2. To prepare students for the work situation they are likely to meet after graduation;
3. To expose the students to work methods and techniques in handling equipment and machinery that may not be available in their institutions;
4. To enhance the transition phase from school to the world of working environment easier and facilitate students' contact for later job placements;
5. To create an opportunity for students to blend theoretical knowledge acquired in the classroom with practical hands-on-application in industry.

The SIWES undoubtedly enhances the quality of students' education and training in Nigeria and foster good relationship between students and the industrial stakeholders. Stressing the importance of the scheme, Mafe (2010), Audu, Kamin and Balash (2013) stated that there are two basic forms of learning: education and training. These two facets/components of learning are essential to the productive world of work and the functioning of the society (Daramola, 2015; Ebere, Ibe & Ononogbu, 2017). No doubt, education and training go hand in hand for national growth and development.

However, securing IT place for undergraduates' students in Nigeria is becoming difficult due to global economic meltdown that bit hard on the national economy, thereby challenging the achievement of the necessary professional standards and quality in the country. This paper examines the existing synergy between education and training of quantity surveying students relative to their professional development and make suggestion on ways of enhancing the falling standard and quality of quantity surveying education and training in Nigeria.

Statement of the Problem

It has been proved that SIWES was set up with the noble objectives to bridge the gap between theory and practice among undergraduate students of Nigeria universities, polytechnics and colleges of education, but the scheme has some teething problems challenging its existence since inception. Some of the notable challenges confronting SIWES in achieving its objectives include: lack of finance that affects almost all aspects of its operations. There are cases of non-payment of allowances to students and supervisors (Wodi and Dokubo, 2009). In the current face of global economic meltdown, particularly in the development country like Nigeria, many quantity surveying firms are not willing to accept students for IT due to lack of jobs and attitudes of some students who are unwilling to undertake the IT without any remuneration. In addition, many students choose places that are not related to their profession. The lack of commitment by IT students according to Ugwanyi et al. (2010) defeats the noble objectives of the scheme,

thereby resulting in lack of practical hand-on-application of knowledge in industry. The issue of students' unrest leading to closure of institutions was also noted by Eze (2010) as one of the serious negative effects confronting SIWES operation in Nigeria as it leads to irregular in academic calendar of universities, polytechnics and colleges of education in Nigeria. Undoubtedly, students without the requisite practical know-how will be a mismatch in today workplaces.

Objectives of the Study

The aim of this paper was to examine the relevance of students' industrial work experience scheme on professional development of quantity surveying students in Nigeria and recommends measures that would help students and institutions to overcome the recurring problems of financial bottleneck, securing placement and irregular supervision in order to achieve the noble aim of this scheme for the country to attains the required technological and economic growth. Thus, the specific objectives of the study include:

1. To determine the level of involvement of quantity surveying students in SIWES and their professional development,
2. To determine the extent SIWES prepare students for the work situation and their professional development, and
3. To determine the extent students, apply theoretical knowledge gained in the classroom to the technical know-how in quantity surveying practice.

Review of Literature

Quantity Surveying Students and Industrial Work Experience Scheme

Education is the process of learning or of acquiring knowledge and information, and also facilitates understanding of information by the recipient (Mafe, 2010; Kim, 2019). According to Ebere et al. (2017) it involves giving systematic instruction to students in a formal setting, such as students in the Universities, Polytechnics, and Colleges of Education in Nigeria. Educational psychologists amongst others Eze (2010); Audu et al. (2013) see education as an instrument that equips the recipient with the knowledge and capabilities to do jobs in the subject area. However, Ugwuanyi, et al. (2010) argued that training aims at equipping the recipients with knowledge, skills, abilities and competencies to carry out specific tasks, jobs or functions as required. Kim (2019) succinctly puts skills training as the process of transferring knowledge, skills, abilities and attitudes (KSAA) required doing a specific job or carrying out a specific function, from one person to another. Based on this fact, students of quantity surveying in Nigeria Universities are made to undergo six (6) Months mandatory training to acquire hands on experience in quantity surveying practice. The process of training can be summed up into four steps: "show, tell, do and check".

Emphasizing the importance of training that comes in form of IT, Kyungha and Heyjin (2019); Ugwuanyi, Chijioke and Ezema, (2010) stated that training is one of the key factors that enhances efficiency and expertise in today world of works. Audu et al., (2013); Eze (2013) and Ebere et al., (2017) averred that SIWES is a veritable tool that promotes, enhances and optimally combined theory and practice for effective professional development of students. Therefore, to

complement the basic knowledge and information learned in the classroom, quantity surveying undergraduate students must undergo compulsory six Months SIWES training after first semester in their 400 level to acquire the requisite practical knowledge, skill, and competencies in their chosen profession. In addition, during the industrial training the students are exposed to the work conditions in which they will eventually meet after graduation.

Student Industrial Work Experience Scheme and Quantity Surveying Professional Development

Quantity Surveyors according to Jagboro (2016) are important members of the design and construction teams in the Nigerian construction industry. They play important roles in construction projects development and delivery as cost experts. The Nigerian Institute of Quantity Surveyors (NIQS, 2015) states that the profession concerned with the prudent management of resources of the construction industry for the best advantage of the society, by providing, amongst others, the financial management for projects and cost consultancy services to both clients and contractors during the whole construction process. The roles of quantity surveyors according to Seely (1997) cited by Musa, Oyebisi and Babalola (2016) demand that undergraduate quantity surveying students should be made to participate in the mandatory SIWES that exposed them to the rudiments and modern quantity surveying practice.

According to Ugwuanyi et al. (2010) and Daramola (2015) SIWES is an inevitable programme to professional development of engineering and technology, sciences and Built environment inclusive. The importance of SIWES in training future professionals in all areas of human development cannot be over emphasized in this technological world. Thus, development of future quantity surveyors in this 21st century required the combination of education and training before their graduation. Eze (2010) maintains that to educate and train employees that gain basic professional skills and competencies in their chosen careers, training has to occur in an appropriate environment. Indisputably, SIWES has become an avenue through which Quantity surveying undergraduate students gains an opportunity of the hands-on-application and information required to practice as competent quantity surveyors.

Kim (2019) on his study of core competencies and employability: the mediating roles of digital literacy and learning strategies asserts that through SIWES students acquired the technical know-how on the use of IT which may not be available in the institutions due to the huge costs of acquiring them. Emphasizing the importance of 'Information Communication Technology (ICT) in this 21st century workplaces, Oyediran and Odusami (2005) stated that the quantity surveying practice has moved way from manual "Paper Taking off" to the use of ICT. Jagboro (2016) argues that there have been radical changes in quantity surveying practice than when it was original established in England 1785. Regrettably, most of the Universities and Polytechnics in Nigeria offering quantity surveying programme do not have ICT packages for quantity surveyors duties.

Musa et al. (2010) argued that in the developed countries like United Kingdom, United State of America, Australia, and Germany etc the use of ICT in quantity surveying practice have brought tremendous innovation into the profession. The increasing adoption and use of ICT in quantity surveying practice has led to the development of different specialist software packages for performing the array of tasks involved in modern quantity surveying practice (Adeoye, 1996 cited in Musa et al, 2010). Therefore, students of quantity surveying should avail themselves the opportunity SIWES has offered since some of the ICT packages for quantity surveying may not be available in the institutions. Thus, the packages needed in the department of quantity surveying for effective teaching and learning include: Digitizers, Autocard, Autosketch, Super Project, Master Bill, WinQs, QSlotus, Computer Aided Taking off (CATO), Estimator Pro.MB 3, QS Cad, RIPAC, EVEREST, Kwikest, etc for processing of operations. Oyediran and Odusami (2005) and Musa et al. (2010) stated that the use of ICT have revolutionized today workplace methods, quantity surveyors duties inclusive.

The Relevance of SIWES to Quantity Surveying Students' Professional Development

According to Wodi and Dokubo (2009); Eze (2013) Students' Industrial Work Experience Scheme (SIWES) is vital to the development of employees' profession skills, attitudes, abilities and competencies. Ebere et al. (2017) asserts that through industrial training, students acquired the requisite technical skills and competencies in their chosen professions. Daramola (2015) added that SIWES has been an avenue through which students' transit easily from the class room to the world of work without much hindrance. Undisputedly, student without this training will be lacking in professional skills, attitudes and competencies. Instances have shown that during this training, students are exposed to practical skills and rudiments in their professional development. Anecdote evidence have shown that SIWES plays an important role in professional development of undergraduate quantity surveying students by equipping them with the requisite skills and expertise, and also prepared them towards the world of work. Skills and competencies in areas like "Building measurement", "Estimating and tendering of building works", "Valuation of work in progress" "Attending site Meetings" and use of newest ICT packages that may not be available in the department etc. are some of the basic quantity surveying duties/practice that could be acquired during the scheme. These hands on experience and information cannot be acquired during classroom work. In addition, Eze (2010) pointed out the benefit of make contact that could lead to employment after graduation.

Methodology

This research undertakes an extensive literature review to provide the required background information on the relevance of students' industrial work experience scheme on professional development of quantity surveying students in Nigeria. The study adopted mixed method research approach using both questionnaire survey and interviews protocol. The quantitative method utilised structured questionnaire survey that were administered to 500 level quantity surveying undergraduate students of University of Benin, Edo State. The study used total enumeration method involving fifty-six (56) students of 500 levels who have gone through student industrial training. Questionnaire survey is a research instrument used to gather data

beyond the physical phenomenon of the researchers (Leedy & Ormrod, 2010). Thus, by virtue of their experience gained during their industrial training, they would be able to answer the questions posed in the questionnaire. Interview protocol was used to validate the results from the questionnaire survey. Flicks (2014) maintained that an interview is an interaction between two or more people to gain insight relative to problems on discussion. A total number of fifty-six (56) questionnaires were administered out of which fifty-four (54) copies were completed and returned resulting in response rate of 94.63%. The response rate achieved for this research is similar to that achieved in other surveys (Danity, 2008; Sutrisna, 2009). Such a response rate is justifiable according to Sutrisna (2009) and satisfactory based on the statement by Danity (2008) that a survey would be considered subjective or inconsequential if the total number is lower than 30. Thus 94.63% response rate achieved in this survey provides responsible data for analysis. Interviews were also conducted with randomly selected five students among the fifty-four who completed and returned the questionnaire survey. The aim of the interviews was to share their perceptions / views on the relevance of students' industrial work experience scheme on professional development of quantity surveying students in Nigeria.

Two framed questions and a 5- point Likert-scale measurement were used to obtain the responses from the students and to analyse the results. Leedy and Ormrod (2010) and Flicks (2014) maintain that Likert scales are effective to elicit participants' perceptions / views on various statements. The five-point scale was converted to a mean item score (MS) for each of the identified statements / factors. The indices were then used to determine the MSs and rank each statement accordingly. The ranking made it possible to cross-reference the relative importance of the statements as perceived by the respondents. This method was used to analyse the data collected from the questionnaire survey. When using Likert scales, it is imperative to calculate and report Cronbach's *alpha* coefficients as well the internal consistency and reliability (Flicks, 2014). Creswell and Creswell (2018) suggest that the following guidelines for interpretation of Cronbach's *alpha* coefficient: 0.90 - high reliability, 0.80 – moderate reliability, and 0.70 – low reliability. The questionnaire survey shows a high reliability Cronbach's *alpha* of 0.90.

Data analysis

With respect to age, all the respondents are above eighteen (18) years representing 95%. In terms of experience, they are 500 level undergraduate quantity survey students who have gone through the six (6) Months mandatory industrial work experience scheme and their responses are deemed to be valid for this study.

Quantity Surveying Professional Development competency

Table 2 indicates the respondents' perceptions of the "Yes" "No" and "Not sure" question relating to SIWES and quantity surveying undergraduate students' professional development competency. The data analysis revealed that 98.45% of the respondents indicated that SIWES can lead to the development of professional competency, skills and attitudes, 1.85% indicated that they are not sure, while none of the respondents indicated 'No', this finding

corroborated the works of Eze (2010); Mafe (2010); Doramola (2015) that SIWES plays a critical role in bridging the gap between theory and practice.

Table2: Quantity Surveying Professional Development Competency

Statement	Frequency (F)	Percentage %
Yes	53	98.15
No	0	0.0
Not Sure	1	1.85
Total	54	100

Use of Quantity Surveying ICT packages at the place of IT

Table 3 shows the respondents' perceptions of the "Yes" "NO" and "Not sure" question relating to use of quantity surveying ICT packages at the place of IT. The data analysis revealed that 75.65% of the respondents agreed that they used ICT packages relating to quantity surveyors' duties at their IT places, 14.81% agreed that they did not use any ICT packages relating to quantity surveyors' duties at the place of their IT, while 1.85% indicated that they are not sure. This research finding supported literature in that the use of ICT has revolutionized all works ethics, quantity surveying duties inclusive (Oyediran & Odusami, 2005).

Table 3: Use of Quantity Surveying ICT packages at the place of IT

Statement	Frequency	Percentage (%)
Yes	45	83.33
No	8	14.82
Not Sure	12	1.85
Total	54	100

Importance of Students' Industrial Work Experience Scheme on Quantity Surveying Professional Development

The questionnaire investigates perceptions of undergraduate quantity surveying students' on the importance of SIWES relative to their professional development. Table 4 indicates respondents' perceptions on the identified statements. It shows in terms of percentage responses to a scale of 1 (minor) to 5 (major), and mean score (MS) ranging 1.00 and 5.00. It is notable that the eleven identified statements have MSs above the midpoint of 3.00, which with an average MS of 3.34, indicating that the respondents perceived that the statements on the importance of students' industrial work experience on quantity surveying professional development are congruent. Literature review supported the findings. According to Eze (2010), educating and training of students to gain basic professional skills and competencies in their chosen careers, training has to occur in an appropriate environment. Daramola (2015) added that SIWES has been an avenue through which students' transit easily from the class room to

the world of work without much hindrance. Undisputedly, student without this training will be lacking in professional skills, attitudes and competencies.

Table 4: Importance of Students’ Industrial Work Experience Scheme on Quantity surveying Professional Development

Statement	Unsure	Response (%)					MS	Rank
		Minor..... Major						
		1	2	3	4	5		
Promote skills development	4.2	6.3	11.9	25.2	29.4	23.1	3.61	1
Expose students to workplace ethics	9.1	4.9	9.8	27.9	27.9	21.1	3.60	2
Bridge the gap between theory and practice	7.7	5.6	14.6	23.1	28.6	20.2	3.58	3
Exposed students to new work method	8.1	7.5	12.1	25.3	28.4	20.1	3.57	4
Create contact for later job placement	8.5	6.7	10.2	23.1	28.2	20.1	3.56	5
Expose students to handling of machine and equipment	7.7	6.5	10.1	26.5	27.3	20.0	3.54	6
Improve professional competency	6.7	6.3	11.2	29.4	28.1	19.9	3.48	7
Equips recipients with knowledge and abilities	6.2	6.8	12.5	28.2	27.5	19.7	3.47	8
Enhanced opportunities for practice	7.7	7.1	12.1	27.7	28.1	19.4	3.45	9
Build in attitudes to carry out specific tasks or functions	6.4	5.9	12.3	27.2	28.2	19.2	3.43	10
Enhanced acquisition of experience	5.6	6.7	12.1	26.2	28.1	19.1	3.42	11

The interviews conducted with five (5) students randomly selected from those who have completed the six Months mandatory IT revealed that through SIWES, students acquired the requisite technical skills, attitudes and competencies in their chosen professions. Since the establishment of SIEWS in Nigeria, the scheme has being an avenue that prepares and equips students mentally towards workplace ethics after graduation. This question was asked to the participants. Do you think that SIEWS is relevant in professional development of quantity surveyors practice?

All the interviewees answered “Yes”. However, one of the students made the following statements.

“SIWES is relevant to the professional development of quantity surveying students”.
“It gives student hands-on-experience as regards to construction processes”.

The second question was posed to the students. Did you use any of quantity surveying ICT packages in your place of IT? Three of the students answered “Yes”. They went forward to name some of the quantity surveying ICT packages they used in their place of IT. “The quantity

surveying ICT packages are: Digitizers, Autocard, Autosketch, Super Project, Master Bill, WinQs, QSlotus, Computer Aided Taking off (CATO), Estimator Pro.MB 3, QS Cad, RIPAC, EVEREST, Kwikest, etc for processing of various quantity surveying duties”.

The other two participants have contradictory views. One of the two interviewees made the following statements.

“In the office where I did my IT there is no quantity surveying ICT packages. “The firm is still using papers and calculators in performing their daily tasks”

“While the other interviewees stated that he did his IT with the State Ministry of Works and Housing, and there is nothing like quantity surveying ICT packages. It is paper and calculator”.

However, in the developing countries like Nigeria, the use of ICT/computer is novel in most of the offices, quantity surveying firms inclusive. Nonetheless, literature have pointed that the use of ICT has brought global landmark in all facets of human endeavor. Literature corroborated the importance of ICT in 21ST century quantity surveying practice as stated by Musa et al. (2010) and Jagboro (2016), that quantity surveyors roles are becoming more vital in all sectors of the economy particularly for the attainment of sustainable national development goals than when it was originally established in England in 1785.

Challenges fronting SIWES operation in Nigeria

The question examines challenges fronting SIWES operation in Nigeria. Table 5 indicates the respondents’ perceptions relatives to the identified statements on challenges fronting operation of SIWES in Nigeria. It shows in terms of percentage responses to a scale of 1(minor) to 5(major), and mean score (MS) ranging between 1.00 and 5.00. It is notable that the seven MSs were above the midpoint of 3.00, which, with an average MS of 3.61, indicating that the respondents perceived that the identified statements were recurring problems encountered by Nigerian students during IT periods. These findings corroborated literature reviews on this subject matter. Wodi and Dokubo (2009) and Eze (2010) pointed out that finance as one of the problems fronting the smooth operation of SIWES in Nigeria.

Table 5: Challenges fronting SIWES operation in Nigeria

Statement	Unsure	Response (%)					MS	Rank
		Minor..... Major						
		1	2	3	4	5		
Problem of finance	4.1	6.1	11.2	25.1	29.1	23.1	3.47	1
Students face problem of placement	8.1	6.1	9.1	27.3	27.1	21.2	3.45	2
Nonpayment of allowance	7.1	5.1	9.3	23.7	25.8	21.1	3.43	3
Irregular visit by supervisors	8.1	6.2	9.1	23.9	28.3	20.4	3.42	4
Irregularity in academic calendar	9.2	7.1	10.1	23.6	28.1	21.2	3.41	5
Lack of experienced industrial based supervisor	9.1	10.1	9.2	23.2	27.2	20.1	3.40	6
ASUU and Federal Government of Nigeria scuffle	6.1	9.2	9.1	23.1	28.1	19.3	3.38	7

Interviews conducted with students revealed that there are some recurring problems confronting operation of SIWES in Nigeria. This question was asked to the randomly selected students for the interviews. Do you encounter any problem(s) during your IT period? All the students unanimously answered “Yes”. One of the interviewees went further and made the following statements.

“I was not paid any stipend throughout my six (6) Months IT period”. “It was on two occasions that the Principal Partner of the Quantity surveying firm gave myself and the other IT student from another University five thousand Naira (N5000)”. “Before I got the place, I was told that there will not be any payment because they do not have any on-going project”. “Again, throughout the 6 Months no supervisor visited the place”. “However, there is lack of commitment and unwillingness among some student to participant in scheme”.

It was also noted in the literature that non-payment of allowance to students and irregular visits to companies and industries where students are doing their IT are some of the challenges fronting SIWES operations in Nigeria. Ugwuanyi et al. (2010) on challenges fronting SIWES in Nigeria pointed out cases of students not willing to participate in the mandatory scheme and some employers also not willing to accept students into their establishments due to their poor attitudes and lack of commitment towards the scheme.

Conclusion

The students’ industrial work experience scheme no doubt exposed quantity surveying students to new work methods and also aid them to gain the needed experience in the technical rudiments of quantity surveying profession. Through the SIWES students were able to gain the hand-on experience to bridge the gap between knowledge acquired in the classrooms and the relevant practical skills required to practice as professional quantity surveyors. Nonetheless, quantity surveying students were faced with dotting challenges during their IT training periods that ranges from non-payment of allowances and securing relevant placements for training, irregular visit from the institution and inadequate supervision by the industrial based supervisor were highlighted as some of the problems facing SIWES operations in Nigeria. The results of interviews conducted with students who have done theirs IT also indicated challenges such as lack of commitment and unwillingness among some student to participant in this noble scheme.

Recommendations

Consequent upon the findings of the study, the following recommendations are made:

1. Quantity surveying students should demonstrate seriousness and commitment towards this noble scheme that equip them with the practical know-how in their future career.
2. Quantity surveyors practicing firms, large, medium and small construction companies, public sector establishments, miniseries of works and housing at the three ties of the government and other related organizations should be encouraged to accept quantity surveying students for IT period.
3. Employers should also show some commitment by given stipends to students to encourage participation.

4. To achieve the objective of this noble scheme, the Federal government of Nigeria should regularly release the allowances set aside for effective and efficient operation of SIWES training.

References

- Audu, R, Kamin Y. B., & Balash, F. (2013) Technical vocational education: as a veritable tool for eradicating youth unemployment, *Journal of Humanities and social Sciences* 8(2):10-17.
- Creswell, J.W. & Creswell, J.D. (2018) *Research design: Qualitative, Quantitative, and Mixed Methods Approaches*, Los Angeles: Sage Publications.
- Daramola M. O. (2015) Enhancing quality of engineering education via industrial training: A proposed strategy for South African universities, *QScience Proceedings (Engineering Leaders Conference 2015)*: 25 <http://dx.doi.org/10.5339/qproc.2015.elc2014.25>
- Danity, A.R.J. (2008) Methodological pluralism in construction management research, In: Knight, A. and Ruddock, L. (Eds.): *Advanced research methods in the built environment*, Oxford: Willey-Blackwell.
- Ebere C, Ibe VSO, Ononogbu N (2017) Evaluation of student's industrial work experience scheme (SIWES) on the attainment of employable skills by agricultural education graduates in Abia State, *International Journal of Agricultural and Home Economics Education*, 4(1):115-127.
- Eze N.M (2010) Industrial work experience: A medium for actualizing vision 2010 through home economics education, *Journal of Women in colleges of Education*, 1(2), 154–160.
- Eze CP (2013) Empowering the youth through technical and vocational education: A panacea for sustainable national development, *Unizik Orient Journal of Education*, 7(1):59-64.
- Flick, U. (2014) *Introduction to Qualitative Research*, 5th Edition, London Sage
- Industrial Training Fund (ITF) (2013), *Information and guidelines for student's industrial work experience scheme for developing the Nations Human resources*. Momoh OA (2012). *Revitalization of technical education in Nigeria as a vehicle for transformation*: In *Proceedings of: COREN 21st Engineering Assembly* pp. 53-81.
- Oyediran, O.S. & Odusami, K.T. (2005) A Study of Computer Usage by Nigerian Quantity Surveyors, *Journal of Information Technology in Construction*, 10: 291-303.
- Kim, K. T. (2019) Core Competencies and Employability: The Mediating Roles of Digital Literacy and Learning Strategies. *The Journal of Social Sciences Research*, 5(1): 190-200. DOI:<https://doi.org/10.32861/jssr.51.190.200>
- Kyunghwa, L. and Heyjin, Y. (2019) Analysis of differences in core competencies according to major, grade and gender of Korean University Students, *The Journal of Social Sciences Research*, 5(1): 139-144. <https://doi.org/10.32861/jssr.51.139.144>

- Leedy, P.D. and Ormrod, J.E.(2010) Practical research: planning and design 8th edition, Upper saddle River, New Jersey: Pearson.
- Mafe, O. A. T. (2010) Effectiveness of SIWES with Respect to Chemical Engineering: Available on http://www.nsche.org.ng/cms/publications_cms/uploads/lecture_nsche_engr_mafe.pdf . Assessed on February, 27, 2020
- Musa, N.A, Oyebisi, T.O. & Babalola, M.O (2010) A study of the impact of information communication and technology on quantity surveying services in Nigeria, *The Electronic Journal on Information Systems in Developing Countries*, EJISDC (2010) 42, 7, <http://www.ejisdc.org>.
- J
agboro, G.O. (2016) Unmasking the Tower of Babel and the Scourge of Abandoned Projects in Nigeria, Obafemi Awolowo University, Ile-Ife, Inaugural lecture series 286.
- Nigerian Institute of Quantity Surveyors (NIQS, 2015), Vision Statement: 2015 Dairy.
- Sutrisna, M. (2009) Research methodology in doctoral research: Understanding the meaning of conducting qualitative research, Working Paper presented in ARCOM Doctoral Workshop, Liverpool, John Moores
- Ugwuanyi, Chijioke F. and Ezema, Jonas U (2010) Challenges of Students' Industrial Work Experience Scheme (SIWES) in Library and Information Science in the ICT Environment, *Library Philosophy and Practice (e-journal)*, <http://digitalcommons.unl.edu/libphilprac/401>.
- Wodi SW, Dokubo A. (2009) Appraisal of students industrial work experience scheme (SIWES) in five tertiary Institutions in Rivers State Nigeria, *European Journal of Social Sciences*. 7(3), 42–51.