

Determination and Utilization of Mentoring and Scaffolding Mechanisms by Lecturers for Teaching Vocational Agricultural Education to Students in Tertiary Institutions of Taraba State, Nigeria

Dr. Jifin Danbeki Tsojon

Department of Agricultural Education, College of Education, Zing, Taraba State

doi: <https://doi.org/10.37745/ijvter.15/vol9n34555>

Published August 10, 2023

Citation: Tsojon J.D. (2023) Determination and Utilization of Mentoring and Scaffolding Mechanisms by Lecturers for Teaching Vocational Agricultural Education to Students in Tertiary Institutions of Taraba State, Nigeria, *International Journal of Vocational and Technical Education Research*, Vol.9, No.3 pp. 45-55

ABSTRACT: *The study was to determine the utilization of mentoring and scaffolding techniques by lecturers for teaching Vocational Agricultural Education to students in Tertiary Institutions in Taraba State. The study adopted descriptive survey research design. Four research questions guided the study. The areas of the study were the Tertiary Institutions in Taraba State that offer Vocational Agriculture. The institutions include; College of Education, Zing, Taraba State University Jalingo, College of Agriculture Science and Technology and Federal University Wukari. The population of the study was 200 lecturers of Vocational Agriculture from which a sample of 132 were drawn by stratified random sampling technique. The instrument for data collection was a structured questionnaire named "Mentoring and Scaffolding Utilization Mechanisms Questionnaire" (MSUQ). Five experts in vocational agriculture validated the instrument for data collection and was trial tested. A Cronbach Alpha coefficient of 0.80 was established after analyzing the trial testing of the instrument. The Cronbach Alpha coefficient of 0.80 was high enough and indicates that the MSUQ was reliable to elicit information for the study. One hundred and thirty-two copies (132) of the questionnaire were administered on the respondents with the help of research assistant in each of the institutions. The research assistants were able to retrieve 100% of the questionnaire administered. The data collected were analyzed using weighted mean and standard deviation to answer the four research questions. The result revealed that the ten mentoring techniques presented were accepted by the lecturers as mechanism for teaching Vocational Agriculture. So also, the seven scaffolding techniques were accepted by them. Furthermore, the result showed that the utilization of mentoring and scaffolding techniques were not impressive as the utilization falls below 30% of the techniques presented to the respondents. Techniques not utilized for mentoring among other include: friendliness to learners, approachable to learners, give feedback to learners while those techniques not utilized for scaffolding among others include; activate prior knowledge, learner participation, provide support as learners learn, pre-teach vocabulary. Based on the findings of the study, it was recommended among others that lecturers of Vocational Agriculture should sustain the techniques of mentoring and scaffolding while proprietors of the institutions are to motivate the lecturers to attend seminars, conferences and workshops on utilization of mentoring and scaffolding techniques to bring about the required learning of vocational agriculture by students in the tertiary Institutions in Taraba State.*

KEYWORDS: mentoring, scaffolding, mechanisms, utilization, vocational agriculture

INTRODUCTION

Agricultural Education is one of the education programmes offered by Universities, Colleges of Education and other related institutions of learning. In the view of Ukonze and Olaitan (2010) and Akpomedaye (2011), Agricultural Education is an occupational programme designed to equip students with knowledge, skills and attitudes in various farming techniques in agriculture. Tsojon (2022) explained that, Agricultural Education is a course of study in Colleges of Education and other related tertiary institutions designed with series of activities for equipping students with knowledge, skills and attitude in vocational agriculture for instructional delivery to students.

Vocational Agricultural Education is that aspect of agricultural education which is geared towards the acquisition of practical skills and knowledge in soil cultivation, livestock production, crop processing to the benefits of mankind (Okeke, 2010). He maintained that this is aimed at preparing the individual for skills performance towards improving the productivity of the individual in a paid or self-employment. Agbulu and Wever (2011) corroborated that vocational Agricultural Education enable the learners to acquire knowledge and skills in application of new technologies and techniques in farming activities, they added that it also trains the learner in farm records keeping, accounting, decision making and profitable marketing of their farm produce. In the view of Tsojon (2013), vocational Agricultural Education is a programme of instruction organizes for the purpose of improving agricultural method and rural living which involves investment in human capital by spending huge sum of resources to equip the learner with knowledge and skills in various vocations in agriculture. Ibrahim and Mohammed (2018) reiterated that vocational Agricultural Education provides the learners with the basic agricultural knowledge and skills to innovate and explore the environment for the betterment of the society. The author added that vocational Agricultural Education deals with skills needed by learners to ensure high level production in crop or animal production.

The authors presented their views on vocational Agricultural Education in line with the objectives which are:

- Stimulate and sustain learners interest in agriculture;
- Impact functional and practical skills in agriculture;
- Prepare learners for further studies in agriculture and
- Prepare learners for occupation in agriculture (Agbulu & Wever, 2011; Tsojon, 2013; & Isaac, Omoleye & Sani, 2018).

For the objectives of vocational Agricultural Education to be fully achieved skill development in learning are required. The skills development can only be imparted by the trained personnel (lecturers) in Agricultural Education who have acquired the capacity to accomplish this. Asogwa, Olaitan and Asouzu (2013) defined skills as a well-established habit of doing things or performing tasks by individuals. The authors added that this could be sustained by practice. Tsojon (2016) posited that skills refers to specific abilities possessed by lecturers in utilizing

Publication of the European Centre for Research Training and Development-UK agro-climatological instruments for teaching students in colleges of education and other tertiary institutions. In the submission of Isaac, Omolaye and Sani (2018), skills is the ability and capacity needed by deliberate systematic and sustained effort to carry out complex tasks. Owoso, Njoku, Ogunkelu and Onipede (2018), maintained that skill is the expertness in practical ability, dexterity and tact. They explain that to possess a skill is to demonstrate the habit of activity, thinking and behaving in a specific activity in such a way that the process becomes natural to the individual through repetition or practice. Skills are taught to learner by lecturers using different mechanisms such as mentoring, scaffolding and other techniques depending on the expertise of the lecturer involved.

Mentoring refers to process of facilitating and assisting another person's development which includes modeling the message and suggestions being taught to the beginning teacher. The individual facilitating what is taught is the mentor while the junior officer, learner, is referred to as the mentee. The mentor, in this regard, demonstrate a range of cognitive teaching competencies, such as posing carefully constructed questions to stimulate reflection, paraphrasing and using data to improve teaching and learning (Kamarudin, Kamarudin, Darmi & Saad, 2020). Mentoring therefore, is a relationship that leads to creativity, professional growth and mastery of problem-solving techniques. However, mentors are to serve as models, champions, acculturators, educators and supporters (scaffolding) (Bowman, 2014). Koki (n. d.) concluded that mentoring play a critical role in improving knowledge and skills that teachers need to instruct and prepare students for the next century.

Scaffolding is an educational technique first proposed by psychologist Jerome Bruner in 1960. The Psychologist described it as a process through which teachers provide support initially so that the students can work independently. He added that the technique involves working with the student's prior knowledge, break up a lesson into parts, encouraging participation, and providing support as needed (Van Der Stuyf, 2002). The psychologist propounded a scaffolding theory which states that "when students are given the support they need while learning something new; they stand a better chance of using the knowledge independently". Boonmoh and Jumpakate (2019) maintained that assisted performance enables learners to reach beyond what they would achieve alone in a new task. Van Der Stuyf (2002) observed that scaffolding instruction provide supportive learning environment, improves the performance of learners and provides principles for effective instruction. This indicates that a teacher can adopt scaffolding technique to enhance learning in Vocational Agricultural Education.

Statement of the Problem

Vocational agricultural education is aimed at providing vocations in agriculture to learners with interest in it. The learners are expected to be groomed or prepared with requisite knowledge and skills in various occupations in agriculture to fit in the world of work. Akpan (2006) and Ndem, Akubue, Olayinka and Onoh (2018) lamented that the use of conventional teaching methods, such as lecturing, discussion and others, by teachers in tertiary has failed to produce students who can demonstrate creditably in their places of work as they do not possess the needed skills for employment or become self-reliant. Various methods of teaching have been adopted by teachers but mentoring and scaffolding as other techniques of instruction were not

Publication of the European Centre for Research Training and Development-UK equally emphasized and used for instruction in tertiary institutions in Taraba State. Meanwhile, Emeya and Frank (2018) advocated for change in techniques of imparting knowledge and skills to learners as a shift from the traditional method of chalk and talk practice. Besides, lack of empirical evidence about Agricultural Education lecturers' awareness and knowledge of mechanism in mentoring and scaffolding for instructional delivery of vocational agricultural education justifies the need for this study.

Purpose of the Study

The purpose of this study is to determine the utilization of mentoring and scaffolding mechanisms for instructional delivery of vocational agricultural education skills in tertiary institutions in Taraba State, Nigeria. Specifically, the study intends to:

- i. Determine the mechanisms of mentoring in instructional delivery of vocational agricultural education skills in tertiary institutions.
- ii. Determine the mechanisms of scaffolding in instructional delivery of vocational agricultural education skills in tertiary institutions.
- iii. Determine the utilization of mentoring mechanisms by lecturers for instructional delivery of vocational agricultural education skills in tertiary institutions.
- iv. Determine the utilization of scaffolding mechanisms by lecturers for instructional delivery of vocational agricultural education skills in tertiary institutions.

Research Questions

The study was guided by the following research questions:

- i. What is the mechanism of mentoring used by lecturers in instructional delivery of vocational agricultural education skills in tertiary institutions?
- ii. What is the mechanism of scaffolding used by lecturers in instructional delivery of vocational agricultural education skills in tertiary institution?
- iii. What is the utilization of mentoring by lecturers for instructional delivery in vocational agricultural education skills in tertiary institutions?
- iv. What is the utilization of scaffolding by lecturers for instructional delivery in vocational agricultural education skills in tertiary institutions?

METHODOLOGY

The study adopted the descriptive survey research design. This design is appropriate for the study as data would be collected from lecturers of agricultural education in tertiary institutions in Taraba state. This design is a type in which the researcher collects data from the respondents, sample of the population, using the questionnaire for the study (Tsojon, Ochu & Asogwa, 2016 and Omoleye, Isaac & Alhaji, 2018). Data would be elicited from the sampled lecturers on mentoring and scaffolding as mechanisms for instructional delivery in tertiary institutions in Taraba state. The area of the study was Taraba state, Nigeria where the tertiary institutions are situated. Taraba state is located in the Northeastern Nigeria with an annual rainfall from 400mm-11,500m and it lies between latitude 8⁰N and 14⁰N and longitude 7⁰E and 14⁰E (Tsojon, 2020). The tertiary institutions in Taraba state that teach agriculture include College of Education Zing, Taraba State university, Jalingo and Federal University of Wukari. The

Publication of the European Centre for Research Training and Development-UK
population for the study was all the lecturers of agriculture in these tertiary institutions in Taraba state from which respondents were sampled for the study. The sample for the study was determined using the Taro Yamene formula, $n = N/[1+ N (E)^2]$, Emaikwu (2011). Stratified random sampling technique was employed to sample respondents proportionately from the tertiary institutions in Taraba state.

A structure questionnaire was used as the instrument for data collection. The instrument was termed “mentoring and scaffolding utilization mechanisms questionnaire” (MSUQ). The instrument was developed by the researcher based on literature reviewed. The instrument was structured based on the objectives of the study. The items in the four sections of the instrument for data collection were rated on a four (4) point rating scale. Section A and B were rated strongly agree (SA) = 4, agree (A) = 3, disagree (D) = 2 and strongly disagree (SD) = 1, while sections C and D were rated highly utilized (HU) = 4, utilized (U) = 3, moderately utilized (MU) = 2 and not utilized (NU) = 1. The instrument was face and content validated by five experts. Two from University of Agriculture, Makurdi, Benue state; two from Federal College of Education, Yola, Adamawa state and one from Modibbo Adama University, Yola also in Adamawa State. These experts were required to read the questionnaire items thoroughly and correct wrong spellings, wrong information and unclear or ambiguous statements in the instrument. The observation made by the experts was used to develop the final copy of the instrument for data collection.

Twenty copies of the instrument for data collection were administered on twenty lecturers of agricultural education sampled from Federal College of Education (technical), Gombe, Gombe state. This is in agreement with the rule of research, to trial test instrument for data collection outside the area of study to prevent study biases (Tsojon, 2020). The data collected from the trial testing was analyzed using statistical package for social science (SPSS). The internal consistency of the instrument was established from the Cronbach Alpha reliability coefficient obtained. A Cronbach Alpha value of the instrument (MSUQ) of 0.80 was obtained and considered as high enough and reliable for the instrument to elicit data for the study.

The researcher employed the services of research assistants to administer the instrument (MSUQ) on the respondents in the respective tertiary institutions in Taraba state. One hundred and thirty two (132) copies of the instruments were produced and distributed by the research assistants to sampled respondents in the area of study. The research assistants were required to retrieve the instrument after having checked the responses on each item. The research assistants were able to make 100% retrieval of the instrument administered. The researcher then collected the retrieved questionnaire from the research assistants for data analysis. The data collected from the respondents were analyzed using weighted mean and standard deviation to answer the four research questions stated. Decision was based on the real limit numbers such that questionnaire item with mean value of 2.50 to 4.00 was considered “utilized” and “agree” while any item with mean value below 2.50 was considered “not utilized” and “disagree”.

RESULTS

Table 1: Mean ratings of the respondents on the determination of the mechanisms of Mentoring for teaching vocational agriculture in Tertiary Institutions.

S/N	Item Statement	Mean	SD	Remark
1.	Inspiring learners	3.70	0.50	Agree
2.	Friendliness to learner (Put learners 'at ease')	3.59	0.54	Agree
3.	Listen attentively to learners	3.69	0.50	Agree
4.	Passionate in skill development	3.66	0.52	Agree
5.	Provide resources to learner's support	3.70	0.48	Agree
6.	Approachable by learners (Accessible and available when needed)	3.65	0.50	Agree
7.	Willingness to observe learner's work	3.73	0.47	Agree
8.	Gives feedback to the learners	3.73	0.45	Agree
9.	Collaboration between mentor and mentees (Flexibility)	3.64	0.54	Agree
10.	Makes learners set targets for the next lesson	3.70	0.54	Agree

Data in Table 1 revealed that the 10 items had their means ranging from 3.59 to 3.73 and were above the cut-off point of 2.50. This indicated that the respondents agreed that all the items were mechanisms for teaching vocational agriculture in tertiary institutions in Taraba State. The Table also showed that the standard deviation of the items ranged from 0.45 to 0.54 which means that the respondents were not too far from the mean and opinion of one another in the responses.

Table 2: Mean ratings of the respondents on the determination of the mechanisms of Scaffolding for teaching vocational agriculture in tertiary institutions.

S/N	Item Statement	Mean	SD	Remark
1.	Activate Prior Knowledge by lecturers	3.67	0.55	Agree
2.	Pre-teach Vocabulary	3.58	0.59	Agree
3.	Break up lesson into parts	3.35	0.53	Agree
4.	Use of visual aids	3.63	0.57	Agree
5.	Learner participation	3.67	0.56	Agree
6.	Provide support as learner learns	3.71	0.62	Agree
7.	Withdraw support as learner makes progress	3.56	0.65	Agree

Data in Table 2 showed that the seven (7) items had their mean rating ranging from 3.56 to 3.71 and were above the cut-off point of 2.50. This indicates that the respondents agreed that all the items were mechanisms for teaching vocational agriculture in tertiary institutions in Taraba State. The table also showed that the standard deviation of the items ranges from 0.53 to 0.65 revealing that the respondents were not too far from the mean and opinion of one another in the responses.

Publication of the European Centre for Research Training and Development-UK

Table 3: Mean ratings of the respondents on the Utilization of Mentoring mechanisms for teaching vocational agriculture in tertiary institutions

S/N	Item Statement	Mean	SD	Remark
1.	Inspiring learners	3.57	0.69	Utilized
2.	Friendliness to learner (Put learners 'at ease')	1.59	0.59	Not Utilized
3.	Listen attentively to learners	2.17	0.55	Not Utilized
4.	Passionate in skill development	2.36	0.53	Not Utilized
5.	Provide resources to learner's support	1.61	0.58	Not Utilized
6.	Approachable by learners (Accessible and available when needed)	2.24	0.57	Not Utilized
7.	Willingness to observe learner's work	3.57	0.64	Utilized
8.	Gives feedback to the learners	1.42	0.58	Not Utilized
9.	Collaboration between mentor and mentees (Flexibility)	2.21	0.55	Not Utilized
10.	Makes learners set targets for the next lesson	3.67	0.52	Utilized

Data in Table 3 revealed that seven (7) items out of ten (10) had their mean ranging from 1.42 to 2.36 and were below the cut-off point of 2.50. While the remaining three (3) items had their mean rating from 3.57 to 3.67. The standard deviation revealed in the table for the 7 items range from 0.53 to 0.59 and that of the remaining 3 items were from 0.52 to 0.69. This indicates that the means of the respondents were not too far from the mean and opinion of one another in their responses.

Table 4: Mean ratings of the respondents on the Utilization of Scaffolding mechanisms for teaching vocational agriculture in tertiary institutions.

S/N	Item Statement	Mean	SD	Remark
1.	Activate Prior Knowledge by lecturers	2.12	0.74	Not Utilized
2.	Pre-teach Vocabulary	2.27	0.67	Not Utilized
3.	Break up lesson into parts	3.69	0.56	Utilized
4.	Use of visual aids	3.67	0.55	Utilized
5.	Learner participation	1.36	0.61	Not Utilized
6.	Provide support as learner learns	1.85	0.67	Not Utilized
7.	Withdraw support as learner makes progress	2.15	0.61	Not Utilized

Data in Table 4 showed that Five (5) items out of seven (7) had their mean rating from 1.36 to 2.27 and were below the cut-off point of 2.50. The remaining two (2) items had their mean rating of 3.67 and 3.69. The table revealed that the standard deviation of the five items range from 0.61 to 0.74 and that of the remaining Two (2) items are 0.55 and 0.56. This indicates that means of the respondents were not too far from the mean and opinion of one another in their response.

DISCUSSION

The findings in Table 1 revealed that lecturers (respondents) agreed to the mentoring techniques as mechanisms for teaching vocational agriculture in Tertiary Institutions in Taraba State. The techniques among others include: Inspiring learners, listening attentively to learners, approachable to learners, give feedback to learners and flexibility. This study is in agreement with Kamarudin, Kamarudin, Darmi and Saad (2020) who found out that posing carefully constructed question stimulate reflection in learners thus improving teaching and learning. Bowman (2014) and Koki (n.d.) reveal in their separate studies that mentoring supports, educates and play critical role in improving knowledge and skills that lecturers need to instruct and prepare learners for future life.

In Table 2, it was found from the study that lecturers agreed to the Scaffolding techniques as another mechanism for teaching vocational agriculture in Tertiary Institutions in Taraba State. The techniques include: activate prior knowledge, breakup a lesson into parts, use of visual aids, learner participation, provide support to learners and withdraw support as learner learns. The findings of this study were in agreement with the report of Van Der Stuyf (2002) who revealed that a learner requires support in learning among other things. The study was also in line with the study of Boonmoh and Dumpakate (2019) who maintained that assisted performance enables learner to research what they want to achieve.

The result in Table 3 showed the utilization of mentoring mechanisms by lecturers of vocational agriculture in Tertiary Institutions in Taraba State. The Mechanisms utilized were three (3) out of ten (10) items which include: inspiring learner, willingness to observed learners work and make learner set targets for the next lesson. The mechanisms not utilized by the Lecturers include: friendliness to the learners, skill demonstration, providing resources to learners, approachability by learners, give feedback to learners among others. The mechanisms not utilized by the lecturers include: friendliness to the learners, skill demonstration, providing resources to learners, approachability by learners, give feedback to learners among others. This is in consonance with the findings of Tsojon (2020) that not all instructional delivery techniques were utilize by lecturers of agricultural education in teaching. The author indicated that out of the Eleven (11) instruments presented for utilization only six (6) were utilized which is inadequate.

Table 4 revealed that only two scaffolding techniques, out of seven, were utilized while the remaining five were not utilized by lecturers of vocational agriculture in Tertiary Institutions. The mechanisms not utilized include: Cultivate prior knowledge, learner Participation, providing support for learners to learn and withdrawing support as learners learn. These findings were in agreement with the study of Dhakal (2017) who found out that audio, visual and audio-visual instructional materials for teaching Geography in secondary schools were not utilized in teaching chemistry in secondary schools.

CONCLUSION

Researches has revealed that the use of conventional teaching methods; lecturing, discussion and others by lecturers in tertiary institutions has failed to provide students who can demonstrate creditably in their places of works as they lack the skills to perform. It is on the premise of the above that the researcher delved into the determination and utilization of mentoring and scaffolding techniques which were not adequately emphasized for institutional delivery by lecturers of vocational agriculture in Taraba State. The findings of this study revealed that lecturers of vocational agriculture agree to the fact that mentoring and scaffolding techniques were vital mechanisms for teaching in tertiary institutions. The study concluded that not all the mechanisms of both mentoring and scaffolding were utilized by lecturers of vocational agriculture for instructional delivery.

Recommendation

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

1. Lecturers of vocational agriculture should be encouraged by the proprietors of the institutions to sustain the importance of mentoring and scaffolding in instructional delivery.
2. Proprietors of the Tertiary Institutions should support and approve leaves for lecturers to attend Workshops, Seminars and Conference on utilization of mentoring and Scaffolding techniques for instructional delivery.
3. Proprietors of the Tertiary Institutions should package the findings of this study into their capacity building programmes for re-training of lecturers of vocational agriculture.
4. Researchers can leverage on the findings of this study to be included in their empirical studies.

References

- Adimugu, L. (2017). Availability and utilization of instructional materials for teaching Chemistry in Secondary Schools. *International Journal of Novel research in Education and Learning*, 4 (3): 33 - 43.
- Agbulu, O.N. and Wever, D.G (2011). *Introduction to Vocational Agricultural Education*, Makurdi; Selfers Academics Press Ltd.
- Akpan, M.O. (2006). Business education competencies required for entrepreneurship development. *Business Education Journal*, 5(2), 24–31.
- Asogwa, V.C., Olaitan, S.D and Asonzu, I.A. (2013). Entrepreneurial Skills required by Women Retirees for Processing of Pineapple Fruits into juice as a sustainable business in Enugu State, Nigeria. *Herald Journal of Agriculture and Food Science Research*, 2(2), 085-095.
- Boonmoh, A. and Jumpakate, T. (2019). Using Scaffolding Instruction to improve Students' Skills. *SOLA Reflections*, 26(1): 1-16.
- Bowman, M. (2014). Teachers Mentoring as a means to improve Schools, BU. *Journal of Graduate Studies in Education*, 6(1); 47-51
- Dhakal, L. R. (2017). Availability and utilization of instructional materials in teaching geography in secondary schools. *Journal of Geography*. 17, 51 - 58.

-
- Publication of the European Centre for Research Training and Development-UK
- Emaikwu, S.O. (2011). *Fundamentals for Research Methods and Statistics*. Makurdi; Selfers Academic Press Limited.
- Emeya, S. and Frank, U.O. (2018). Influence of Cloud Computing on Teaching Effectiveness among Vocational Education Lecturers in Tertiary Institutions in Akwa Ibom State. *Journal of Association of Vocational and Technical Educators of Nigeria (JAVTEN)*, 23(1): 119-129.
- Federal Republic of Nigeria (2004). *National Policy on Education* (4th ed) Lagos: NERDC Press.
- Ibrahim, A.U. and Mohammed B. (2018). The role of open and distance learning in vocational training and agricultural education. *Journal of association of vocational and technical educators of Nigeria*, 23(1), 180-185.
- Isaac, L.O., Omoleye, O. and Sani, G. (2018). Cotton Production Skills required by teachers of Agricultural Science for effective instructional delivery in senior secondary schools in the Northern education zone of Taraba State. *Journal of Vocational and Technical Educators of Nigeria*, 23(1), 61-71.
- Kamarudin, M., Kamarudin, A.Y., Darmi, R. and Saad, N.S. (2020). A review of Coaching and Mentoring, Theories and Models. *International Journal of Academic Research in Progressive Education and Development*, 9(2); 289-298.
- Koki, S., (n.d.). The Role of Teacher Mentoring in Educational Reform. Pacific Resource for Education and Learning, 1-6.
- Ndem, J.U., Akubue, N.B., Ollayinka, B.M. and Onoh, O. (2018). Best practices for improving the teaching of vocational education courses in Tertiary institutions for national development. *Journal of Association of Vocational and Technical Educators of Nigeria*, 23(1):242-250.
- Okeke, E.I. (2010). Vocational Agricultural Education as an antidote for National development. *Journal of Vocational and Technical Educators (JOVTED)*, 2(3), 136-141.
- Omoleye, O., Isaac, L.O. and Alhaji, A.H. (2018). Performance Improvement needs of Teachers of Agriculture in the Curriculum Content of Agricultural Science in Senior Secondary Schools in Gombe State. *Journal of Association of Vocational and Technical Educators of Nigeria*, 23(1): 27-35.
- Owoso, O.J., Njoku, C.A., and Ogunkelu, M.O. and Onipede, O.J. (2018). Evaluation of Technical and Vocational Skills possessed by basic technology teachers in junior secondary schools in Lagos state for effective delivery. *Journal of Association of Vocational and Technical Educators of Nigeria*, 23(1): 268-275.
- Tsojon, J.D. (2013). Promoting good Governance and Sustainable Conflict Resolution through Vocational Agricultural Education in Communities of Nigeria. *International Journal of Advancement in Development Studies*, 8(4): 8-15
- Tsojon, J.D. (2016). Skills improvement required by lecturers in using some Agro-Climatological Instruments for effective teaching-learning of Agriculture in Colleges of Education in Adamawa and Taraba States, Nigeria. *International Journal of Advanced Studies in Ecology Development and Sustainability*, 4(2): 70-89.

Publication of the European Centre for Research Training and Development-UK

Tsojon, J.D. (2020). Evaluation of Agro-Climatological Instruments for Instruction Delivery of Agricultural Education in College of Education in North – East Nigeria. *Global Journal of Agricultural Research*, 8(2): 7-18

Tsojon, J.D., Ochu, A.D. and Asogwa, V.C. (2016), Skills Improvement Needs of lecturers in the Utilization of Selected weather Instruments for Instructional Delivery in Tertiary Institutions in North-East Nigeria, *Merit Research Journal of Education and Review*: 4(6): 085-095.

Van Der Stuyf, R.R. (2002). *Scaffolding as a Teaching Strategy; Human Learning and Instruction*. New York: City College of City University New York.