

An Examination of Important Competencies Necessary for Vocational Agriculture in Selected Senior Secondary Students in Ijebu North Local Government Area, Nigeria

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Abstract

The study analyses the relationship existing between some specified competencies important to vocational agriculture and preparation for occupation between male and female students in senior secondary schools in Ijebu-North Local Government Area, Nigeria. It adopted the classical design for change experiment (i.e. before and after measures) with eighty-eight subjects (60 males and 28 females) from two schools purposively selected while the classes remained intact. Three objectives and one null hypothesis were formulated to conceptualize the study. The instruments used for the study were two, namely: Agricultural Skill Performance Test (ASPT) and Observer's Rating Scale (ORS); and the data obtained were analyzed using frequency, percentages, graphs and point-biserial correlation co-efficient. The results revealed that 47.73% of the subjects received occupational work experience in schools whereas 52.27% did not; and out of the proportion of (52.27%) representing 46 subjects, 60.87% received outside the school but 39.13% had no opportunity at all. It also showed that a moderately low positive correlation existed between specified competencies important to vocational agriculture and preparation for occupation with a r_{pb} value of 0.34. The study advocated amidst others, for a general change of attitude among stakeholders towards agricultural science being perceived as mere academic rather than being both vocational and academic.

Keywords: Important Competencies, Vocational Agriculture, Senior Secondary Students, Ijebu-North Local Government Area.

Introduction

One of the functions of education especially at the University and post secondary levels is the provision of training for leadership in all occupational fields such as business, industry, transportation, engineering, teaching, medicine etc. Therefore it is the primary duty of schools to provide the youth in secondary schools with the educational experience relevant to their future vocational plans. It is also the responsibility of schools and colleges to give them requisite professional training for competence in specific occupations. Wisconsin Cooperative Extension (2002) defined competency as having sufficient knowledge, attitudes and skills that can contribute to excellence in extension education programmes. Thus, competency is a sufficient quantity of knowledge, skill and ability to accomplish a particular task or purpose.

Tuckman (1997) refers to competencies as skills, behaviours or knowledge that can be demonstrated by the learner and are derived from the explicit conceptualization of the desired outcome of learning. That is to say, competencies are stated so as to make possible the assessment of student learning through direct observation of students behaviours. Competence in the view of Olaitan (2003) is the knowledge, skill, attitude and judgement which one is required in order to perform successfully at a specified proficiency programme. Encarta (2009) defines competence as the ability to do something well, measured against a standard especially ability acquired through experience or training. In the context of this study, competence is knowledge, skills and attitudes required for success in vocational agriculture in senior secondary school students in Ijebu-North Local Government Area in Ogun State, Nigeria. Important competencies, therefore, are those special competencies a vocational agriculture student should possess in acquiring occupational entry level skills to become successfully employable. In the Senior Secondary Vocational Agriculture, students require competencies in handling, preparing, processing, identifying, and performing various operations in agricultural crop and animal productions.

In the opinion of Uka (1974) the most appropriate context for training in useful skills for occupational competence is the school. But unfortunately for the Nigerian child the schools and colleges in the nation have remained too academic. They have been modeled after British Schools with major emphasis on pure knowledge and western cultural values and less focus on technical knowledge and practical skills. For too long the curriculum has been biased towards white collar jobs and this goes against the practical needs of a developing society. This situation is particularly challenging now that Africans are seeking to obtain readily the practical skills of the emerging world especially the knowledge and attitudes required for modernizing the societies and industries.

One way out of this predicament as described above is to embrace vocational education to prepare individuals for activities in or out of school designed to contribute to occupational proficiency. Kanu (1987)

identifies that at the post primary level, vocational education are those phases of education that help to prepare students for occupational employment upon completion of relevant courses. On his own part, Sule (1997) argues that the main thrust of vocational education tends to stress the development of socio-economic individuals by providing the skills, abilities, understanding, attitudes, work habits and appreciation to impart knowledge and information needed to enter and progress in a chosen occupation in industry, agriculture, health, consumer and business area

Of credence to this study is the use of agricultural science as a vocational subject to learn important competencies by secondary school students to acquire occupational entry level skills to become employable. In the light of this, Imarhiagbe (1992) concluded that programmes in vocational education must change to produce individuals that are capable of creative, responsible and adaptive work. In his own submission, Agbarevo (1998) concluded that vocational agriculture places much emphasize on practical agriculture as a means of acquiring occupational entry level skills in farming that will equip the students to enter into agricultural occupation and progress in it. There is a great body of literature that have considered occupational preferences aspiration and choice (Omole, 1990; Onanuga, 2006) but there exists dearth of studies attempting to distinguish important competencies necessary for occupational preparation and the preparation in itself. In spite of the fact that this variable is regarded as important cause in preparation patterns in vocational education.

The study of Ukonze & Olaitan (2010) showed the performance gap values were positive in the twelve items and indicated that improvements were needed in planning by women in agriculture for processing cocoyam into flour and chips for food security. But the same study revealed the performance gap values of all the 13 items that were positive and indicated that improvement were needed by women in processing cocoyam into chips for food security. Ogunlade, Oladele & Agboga (2011) shows that of the six variables tested against competencies four had no significant relationship on the level of competence (training sources, area of specialization, educational status and age). Also there is a high and positive relationship between Human Resource Management (HRM) activities and HRM competency. The result shows further that the number of years the respondents have occupied the office of ZEM (tenure) has a positive but low relationship on their level of competence. Okwoche, Ejembi & Obinne (2011) result shows that all the 24 competency statements were perceived as being moderately important by all the respondents. All the 24 competency statements were considered important by both female and male extension agents. The result further shows from the seven socio-economic characteristics of the respondents only age, education level and annual income showed significant difference in the mean at 0.05 level of probability between male and female village extension agents, whereas gender did not.

However, Onanuga (2006) revealed that in spite of occupational work experience in schools by the students, there was no significant influence on the type of occupation in agriculture they prefer to pursue. The study analysis showed that more than half of the respondents' fathers belonged to farming/agriculture and private business/trading; yet, 120 respondents (65.22%) did not prefer to take up their father's occupation. The study of Onanuga (2006) reports that it is evident that for non-preference type of students, a significant relationship was found between fathers' occupation in preference for occupation in vocational agriculture and sex; but no relationship was found for preference type of students. Conversely, for non-preference type there was no statistically significant interaction between fathers' occupation on preference for occupation in vocational agriculture and sex; but there existed in preference type of students.

Since the introduction of Agricultural Science into senior secondary education curricula, some major constraints to its effective implementation have been identified to include: lack of adequate teaching materials, equipment and tools (Agbarevo, 1998; Olaitan & Ajala, 1987; and Olaitan, 1991). Consequently, agricultural education programmes in our secondary schools have remained essentially devoid of practical based skills in agricultural production (Anaso & Anene, 1984; Eze, 1997 and Ogbazi, 1985). The implication of the foregoing is that schools are graduating students with inadequate job skills in agricultural production and self-employment. This portends a bleak future for the attainment of the lofty goals of the National Policy on Education of making secondary school leavers "immediately employable". Anaso & Anene (1984), Eze (1990) and Ogbazi (1985), these studies report that school training in agriculture is primarily limited to classroom instructions, overloading students with masses of factual information with little or no "hard-on" experience in agricultural practices mainly because the schools lack facilities for practical work. According to Okorie (1993), lack of adequate teaching materials and equipment resulted in schools graduating pupils with poor quality, devoid of enough vocational and job skills as well as ability to solve practical problems. Perhaps this is one of the reasons Aliyu, Abdu, Khamis, & Abubakar (2011) posit that acquisition of practical skills is an important condition of attaining competency or mastery in vocational agricultural education. Onanuga (2000) submits that articulate and enhanced practical classes will reveal the abilities of secondary school students in demonstrating the needed skills in psycho-productive skills in vocational agriculture. In the light of this, Onanuga (2001) recommended that performance based test rather than achievement test is more ideal and should be used for agricultural science and other vocational school subjects. Therefore, increased emphasis should be placed on practical, if we are to

attain growth in vocational agricultural education.

Hypothesis

The null hypothesis formulated is that there is no significant relationship between some specified competencies important to vocational agriculture and the preparation for occupation in agriculture between the male and female students in senior secondary schools. To buttress this, the study was designed to examine the contribution of important competence skills paramount to vocational agriculture that require to be given some priority in line with the preparation of senior secondary school students for the various occupations in agriculture. The objectives of the study are to:

- a). determine the respective ability of students in exhibiting specified competencies.
- b). find out how students are prepared for occupation in vocational agriculture.
- c). analyze the relationship existing between some specific competencies important to agriculture and preparation for occupation in agriculture based on gender.

Methods and Procedures

The classical design for change experiment, that is, the before-and-after measures was adopted for the purpose of the research. The researcher taught the agricultural production materials covering five topics in two schools and the instruction session lasted for five consecutive weeks. The two methods of teaching were learning-by-doing and the conventional teaching with one assigned to each of the two sample schools.. The total number of subjects that was used for the research was eighty-eight subjects as intact groups in the Agricultural Science classes. Meanwhile, the two sample schools were purposive in selection taking cognizance of the availability of practical facilities like the school farm (crop farm, animal husbandry like piggery, rabbitery or poultry; and fish farm); in schools used for the study. The instruments designed were Agricultural Skills Performance Test (ASPT) and Observer's Rating Scale (ORS) which were administered on students of agricultural science in a school as pilot test different from the study and this did not make the final list of sample schools. The ASPT in consonance with Onanuga (2001) was tailored towards skills performance but theoretical oriented while the ORS was practical directed with emphasis on display (performance) during practical classes. The theoretical competent was incorporated to allow the students enjoy the normal and natural classroom ecology which they were used to, so as not to allow them introduce some kind of pollution when they are made to know that the focus is the practical aspect. The learning activities designed for the study covered two aspects of the practical and the theory based on selected topics for instruction. The practical classes were back up approach to the theoretical classes hence, the instruction had been received prior to the practical classes.

In the Observer's Rating Scale (Ezewu, 1984), Ten areas of competency was used for the observation and graded using the least score as 0 and the highest as 5, giving a total score of 150 in the matrix. The areas of competency covered are: how well does the student:

- i. Handle the sickle or cutting knife?
- ii. Carry out the cutting activity?
- iii. Perform the drying operation?
- iv. Prepare the nursery seed bag?
- v. Place the seed in the nursery bag?
- vi. Transplant the seedling from the nursery to the field?
- vii. Handle live fish inside the water?
- viii. Remove the scales, the gut and the gills?
- ix. Select good seeds (undamaged) from the lot presented?
- x. Identify heritable traits in specific crop plants on the field?

The subjects were observed and graded during the practical classes to determine their respective ability in displaying specific competencies in vocational agriculture. The observation and rating activities formed the basic component of the evaluation of learning (performance) and this forms the practical experience of the study. The data obtained were analyzed using frequency, percentages, graph and point bi-serial correlation co-efficient.

Results and Discussion.

Table 1: Distribution of Subjects Based on Receipt of Occupational Work Experience in School.

Receipt of Occupational Work Experience in School	No	%
Yes	42	47.73
No	46	52.27
Total	88	100.00

Source: Field Work 2012

Table 1 shows that 42 (47.73%) received occupational work experience in school, the reason being that, the schools those students attend possess some facilities and infrastructure for real practical agriculture. Some of these include rabbitery, piggery, fish pond, and crop and poultry farms. Whereas, 52.275% did not receive occupational work experience in school, this is as a result of the negligence on the part of the agriculture teachers and the school administrators in general. This result supports the findings of Anaso & Anene (1984), Eze (1997) and Ogbazi (1985), which report that school training in agriculture is primarily limited to classroom instructions. Particularly, where some of the facilities were available for the experience sharing of the students but the students were deprived of such an opportunity. Thus, it may lead to negative influence on the learning, interest and attitude of the students towards vocational agriculture at the senior secondary school level of our educational system in Nigeria.

Table 2: Distribution of subjects that received Occupational Work Experience in School according to source.

Source in School	No	%
School Crop Farm	12	28.57
Poultry Farm	10	23.81
Piggery, Rabbitery, & Fish Pond	20	47.62
Agric Mechanical Workshop	0	0.00
Others	0	0.00
Total	42	100.00

Source: Field Work 2012

Table 2 shows that the no subjects received occupational experience in Agricultural mechanical workshop and some other sources at the expense of school crop and poultry farms, piggery, rabbitery and fish pond. The reason cannot be far-fetched from the fact that these available sources are cheaper to establish, maintain and less burdensome in terms of management. This finding corroborates the study of Uka (1974) who posits that the most appropriate context for training in useful skills for occupational competence is the school. It is evidenced in the research that great effort had been made to teach the students of agricultural science in the study area what they are supposed to know. In spite of this, little efforts had been geared towards the practical preparation of students of vocational agriculture. Onanuga (2000) submits that articulate and enhanced practical classes will reveal the abilities of secondary school students in demonstrating the needed skills in psycho productive skills in vocational agriculture. Perhaps this goes to support Adewunmi (1990), by positing that an agricultural science teacher who does not have any meaningful practical training will not be enthusiastic about establishing a school farm so as not to expose his/her deficiencies in a way that most teachers of agriculture assume and perceive agriculture as mere academic rather than being vocational and academic and practical oriented.

Table 3: Distribution of Subjects that received Occupational Work Experience outside School.

Receipt of Occupational Work Experience outside school	No	%
YES	28	60.87
NO	18	39.13
Total	46	100.00

Source: Field Work 2012

Table 3 results show that 50% of the subjects received occupational work experience from outside the school, hence it agrees with the findings of Okorie (1993) that lack of adequate teaching materials and equipment resulted in schools graduating pupils with poor quality, devoid of enough vocational and job skills as well as ability to solve practical problems. This situation failed to align with the submission of Agbarevo (1998) that vocational agriculture should place much emphasis and practical agriculture as a means of acquiring occupational entry skills in farming that will equip the students to enter into agricultural occupation and progress in it. Nonetheless, only a proportion of 28 subjects (60.87%) received occupational work experience from outside the school while, 18 subjects (39.23%) did not receive any even outside the school. However, those who received outside the school may have gotten the opportunity through holiday job, parental occupation or job, or through friends and peer's influence and some other unidentified modes.

Students' ability in exhibiting specified competencies through the Observer's Rating Scale in Vocational Agriculture in graphical representations.

Figure 1: Graph showing ORS Scores of the female students in Vocational Agriculture.

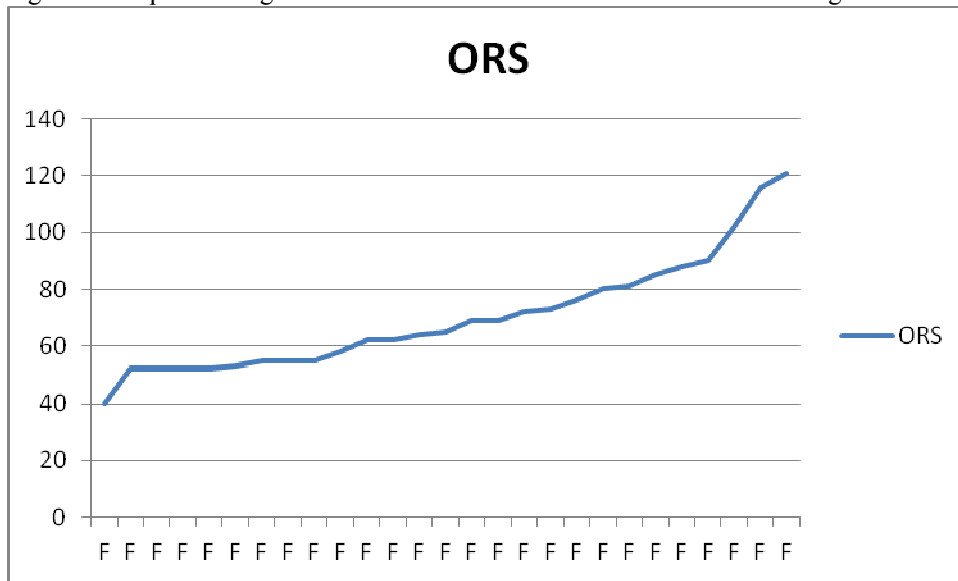
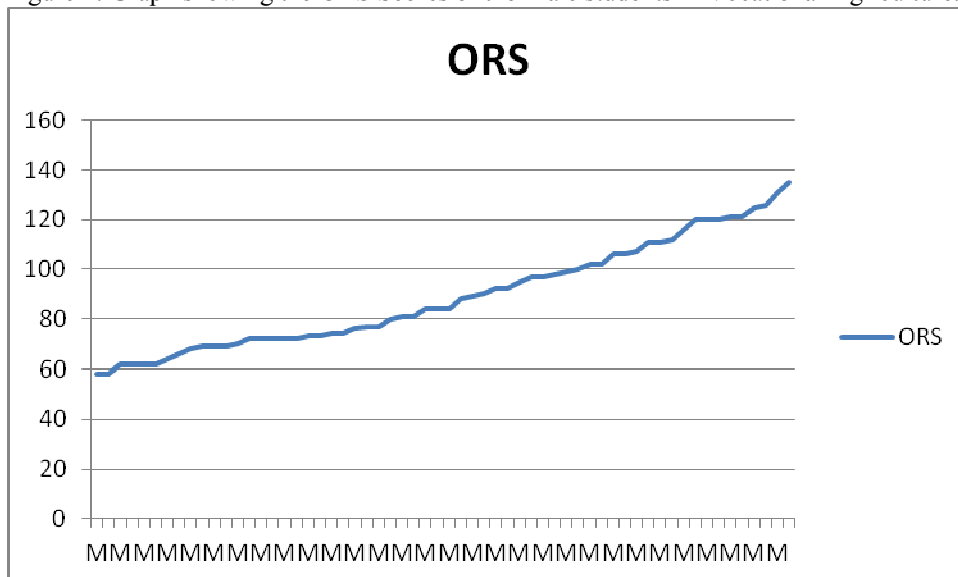


Figure 2: Graph showing the ORS Scores of the Male students in Vocational Agriculture.



The patterns of score distribution as exemplified on the graphical illustrations (Figures 1 & 2) showed that greater proportion of the students' scores fall in the region of the high, while a small proportion falls on the low side, even though, the male students tend to show a better performance than their female counterparts in that the least and highest scores in the male were 58 & 135 and that of the female were 40 & 121 respectively. This finding does not give the impression that the male students are better than the female students because the graph in figure 1 shows that distribution of scores is somehow spreading (the gradient is undulating) unlike the figure 2 showing that the scores distribution is somehow compact (the gradient is consistent). It is observed that the male students tied more than the female students this is because the number of the male is more than double that of the female students. From the results, 75 subjects representing 85.23% had scores above 40% of the total score of 150, but only 13 (14.77%) scored below 40% which is globally agreed as a pass mark. In support of this trend, this may simply imply that students gained tremendously from the theoretical instruction which they were to apply during practical class where they displayed the competencies for performance test. In addition, the variability in the students' scores distribution goes to show that not all the students gained tremendously from the teaching. The pattern of scores distribution may be attributed to the fact that one of the two methods of teaching employed is not as effective as the other one. If on the other hand all the students earned high scores and thus the standard deviation of the score distribution becomes low. It would have implied that the two methods of teaching were highly effective.

The Hypothesis was tested using the point bi-serial correlation co-efficient designated by (r_{pb}). The

point bi-serial correlation co-efficient measures two variables of sex and performance test in vocational agriculture. The two variables of interest here are the performance test in vocational agriculture and sex of the subjects. Each subject's performance is determined using Observer's Rating Scale to grade the student's performance individually in vocational agriculture. Each subject's sex is determined on the basis of male and female group. The data on performance test on vocational agriculture is classified as interval in nature, while the data generated from the item for measuring sex group are nominal-dichotomous in nature.

The value of (r_{pb}) of 0.34 shows a moderately low positive correlation co-efficient. This value shows that a moderate relationship exists between specified competences important to vocational agriculture and preparation for occupation in agriculture among male and female students in senior secondary schools. Therefore, the null hypothesis is not rejected. In other words, it is hereby accepted that there is significant relation between some specified competencies important to vocational agriculture and preparation for occupation in agriculture among male and female students of agriculture in senior secondary schools in Ijebu-North Local Government Area, Nigeria. This result of this study is similar to the findings of Okwoche, Ejembi & Obinne (2011); Onanuga (2006) and Ukonze & Olaitan (2010).

Recommendations and Suggestions for Policy Implication.

The following recommendations and suggestions are advocated based on the collected data and observations.

- a). For teachers and teaching process, teachers should strive to incorporate practical classes into class teaching schedules in order to enable students acquire useful knowledge and practical skills in agriculture. In addition, teachers should give adequate attention, encouragement, support and contribution towards the efforts of vocationalisation of agriculture and start to exhibit positive attitude in respect of studying agriculture as a vocation. Furthermore, classroom instructions from teachers should be directed at development of clearly identified students' competencies in agriculture.
- b). On the students' part, they need to change their orientation toward agriculture, because it is more of vocational than academic. As such, it can bestow on them employable skills which can make them become self-employed, self-reliant and independent to a certain extent. They should also endeavour to learn agricultural skills on real jobs under actual working condition. Hence, it is advisable that they engage in holiday jobs and weekend jobs on agriculture farms and establishments.
- c). Meanwhile, curriculum planers and developers should fashion out agriculture curriculum in a way that provision will be on the job training and work experience gathering by students of agriculture.

Conclusion

In view of all these, the policy implication is that provision of appropriate amenities and infrastructures must be put in for the job training and occupational work experiences that will facilitate career and occupational development of the students. On this premise, the students can at very early stage of life discover their respective potentialities that can be improved upon and they can grow up to become better citizens of the nation. In order words, the desire of the national policy on education to train individual students to become entrepreneurial would be more definitely feasible and make the learning of agriculture more interesting and pleasant.

References

- Adewunmi, A. I (1990). Curriculum Factors Affecting the Employment Opportunities for higher school leavers in the agricultural sector of the economy. *Technical Education today*, 2, (1), pp.18.
- Agbarevo, M. N (1998). Towards an Effective Students Participation in Practical Agriculture in Secondary School. *Technical Education Today*, 8, No 1& 2, pp.16 – 20
- Aliyu, A. K; Abdu, A. N; Khamis, L & Abubakar, A. (2011). Towards enhancing Vocational Agricultural Education in Nigeria. *The Kumbotso Teacher Educator*, 2 (2), pp
- Anaso, A. B. & Anene, C. (1984). A Guide to Teachers of Crop Protection in Colleges of Agriculture in Nigeria. Zaria: DAC/ABU.
- Encarta, (2009). Microsoft R Student 2009 DVD. Redmond WA: Microsoft Corporation.
Retrieved May 27, 2009 from <http://www.microsoft.com/encarta>
- Eze, T. (1990). Policy Constraints to the Growth of Technology Education Programmes: Implications for Technology Development in Nigeria. *Journal of Technical Education Review* 2 (2).
- Ezewu, E. E. (1984). Towards a Taxonomy of Educational Objectives in the Psycho-productive domain. *Nigerian Journal of Technical Education*, 20 (1), pp 23 – 34.
- Imarhiagbe, K.O (1992). Vocational Education Programmes in Nigeria, Issues and Challenges. Journal of Teachers Education Pub. By Technical Provost Consultative Committee. Vol. No. 1 pp 43
- Kanu, J. N. (1987). Should Vocational Education be offered in Secondary Schools? "The Nigerian View". *Nigerian Journal of Technical Education*, 4 (1&2) pp24
- Ogbazi, J. N. (1985). The Role of Cooperative Education in the Preparation of the Nigerian Youth for

- Employment in Agricultural Occupation. In Ehiamentor, E. T. (ed) Trends in Vocational Education in Nigeria. Benin City: Nigerian Education Research Association.
- Ogunlade, I; Oladele, I.O & Agboga, F. I. (2011). Self-perceived competencies assessment and human resource performance of zonal extension managers in northern Nigeria. *Journal of Food, Agriculture & Environment*, 9 (3&4) pp1 0 4 0 - 1 0 4 4 .
- Okorie, J. U. (1993). An Overview of the Development of Vocational and Technical Education in Nigeria. In Anyakoha, E. U. & Osuala, E. C. (eds) Vocational Education and Self-Reliance. Nsukka: NVA Publishers.
- Okwoche, V. A; Ejembi, E. P; & Obinne, C. P. O (2011). Professional Competencies Perceived to be Important and Needed by Female and Male Agricultural Extension Agents: A Study from Nigeria. *Journal of Agricultural Science*, 2(2) pp121-126.
- Olaitan, S. O. and Ajala, A. A. (1987). Agricultural Science in Teacher Training Colleges in Nigeria: An Experience of Three States. In Ayodele, S. O. (ed). Empirical Studies of the Curriculum Issues in Nigeria. Benin City: Curriculum Organization of Nigeria.
- Olaitan, S. O. (1991). Technical and Vocational Education in Nigerian Schools. National School Curriculum Review Conference Proceedings. Lagos: Federal Ministry of Education.
- Olaitan, S. O. (2003). Understanding curriculum. Nsukka. Ndudim Printing & Publishing Company.
- Omole, M. A. L. (1990). Parental Socio-Economic Status and the Occupational choice of children: A review of related studies. *Technical Education Today*, 1, pp 48 - 52
- Onanuga, P. A (2000). The Effect of Guided Discovery on Psycho-Productive Skills Performance in Vocational Agriculture. Unpublished M.Ed Degree Dissertation. Ogun State University, Ago-Iwoye.
- Onanuga, P. A. (2001). Differential Effects of Guided Discovery and Conventional Methods on Secondary School Student's Achievement in Agricultural Science. *African Journal of Educational Research*, 7 (1 & 2), pp 93 - 100
- Onanuga, P. A. (2006). Parental Occupation and Work Experience as Factors in the choice of Agriculture as a Career among Secondary School Students. *International Journal of Applied Psychology and Human Performance*, Vol. 1, pp 111 -122.
- Tuckman, B. W. (1975). Measuring Educational Outcomes Fundamentals of Testing Harcourt Brace Jovanovich Inc, USA pp 187
- Uka, N (1974). The Nigerian Youth and Vocational Education. *West African Journal of Education XVIII (1)*.
- Ukonze, J. A & Olaitan, S. O. (2010). Competency Improvement needs of Women In Agriculture in processing cocoyam into flour and chips for food security in South Eastern Nigeria. *African Journal of Teacher Education*, 1 (1), pp 149 – 157.
- Sule, A (1997). Landmarks in the Growth and Development of Vocational and Technical Education in Nigeria. *Gombe Technical Education Journal (GOTEJ)*, 1(1)
- Wisconsin Cooperative Extension (2002). Competencies for Extension Faculty and Academic Staff in Community Based Educator Roles. Wisconsin: University of Wisconsin Publication.

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