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## Secondary School Agriculture Curriculum Implementation for Guaranteed Effective Skills Acquisition

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**Abstract:** *The aim of the study was to examine secondary school agriculture curriculum implementation for guaranteed effective skills acquisition. The sample size consisted of three hundred and thirty two (332) agricultural science teachers in Taraba State. Primary data was used for the study. The logit model was used to estimate the determinants. STATA 8 statistical packages for Windows was used to compute the estimates. Apart from the poor state of infrastructure which has negatively influenced the teaching of science in the State, the agricultural science teachers themselves are not well positioned to teach agricultural science effectively. Their deficiencies range from the use of inappropriate teaching methods for teaching agricultural sciences, through lack of commitment and dedication to inaccurate assessment of students learning outcome in agricultural science. Effective skill acquisition however, may not be guaranteed due to these challenges. Government and agency responsible for teacher development should be put in place. An action plan to enhance the capacity of teachers in the use of ICT driven pedagogy, modern classroom practices and assessment techniques are needed. Agribusiness contents for vocational agricultural science teaching should be improved upon.*

**Key words:** *agricultural science curriculum, effective evaluation, secondary school*

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### 1. Introduction

In the National Policy on Education, Agriculture is one of the subjects offered in Junior and Senior Secondary Schools, as a pre-vocational elective and vocational elective respectively (Federal Republic of Nigeria, 2013). The curriculum content of the senior school level was structured to focus on three major areas: production (food production), projection (agronomy and forestry) and economics (agricultural economics and farm management). ‘Guided Discovery’ a method that lays emphasis on learning by doing was recommended in the curriculum to enable the students explore and harness the agricultural resources within their local environment. This will help students in food production and other agricultural products for themselves and their community (Nigerian Educational Research and Development Council [NERDC], 2012).

In view of the importance of agriculture to a nation, Nigeria adopted the teaching and learning of the subject at all levels of education. As provided in the National Curriculum for

senior secondary school (FME, 2008), Agricultural Education is designed to lay a solid foundation for vocational agriculture that is proposed to train individuals to acquire relevant occupation skills, that will make them to be productive farmers. Ajalla (1985) in a study on "The Educational resources for effective teaching of vocational agriculture in secondary schools" revealed that the nation is witnessing unprecedented high-level youth unemployment even with great number of students that offered agriculture in the school certificate examinations.

### **1.1. Research Question**

How would the content of secondary school agriculture curriculum be implemented to guarantee effective skills acquisition?

### **1.2. Objective of the Study**

The aim of the study was to evaluate the content of secondary school agriculture curriculum implementation for guaranteed effective skills acquisition.

### **1.3. Research Hypothesis**

**H0:** The content of the secondary school agriculture curriculum do not have significant marginal effect on guaranteed effective skills acquisition

## **2. Methodology**

### **2.1. Population of the Study**

The population for this study comprised all teachers of agricultural science in all the 289 secondary schools in Taraba state offering agriculture science. The population is estimated to be 1,938 (Taraba state Secondary Education Management Board (TSEMB), 2011).

### **2.2. Sampling Size Determination**

Respondents (teachers of agricultural science) were chosen for the study through the use of Yamene (1967) sample size determination technique. This technique was used because: a) the population of the research is finite, b) probability procedure can be used, and c) the data is assumed to be randomly distributed. The method used is indicated below – Mathematically derived Yamane formula:

$$n = \frac{N}{1+N(e)^2}$$

Where, n = required responses/sample size; (e)<sup>2</sup> = error limit; N = population size

Placing information in the formula at 95% confidence level and an error limit of 5% result in the following:

$$n = \frac{1,938}{1+1,938(0.05)^2}; n = \frac{1,938}{1+1,938(0.0025)}; n \approx 331.565; n = 332$$

Three hundred and thirty two (332) agricultural science teachers were, therefore the lowest acceptable number of responses to maintain a 95% confidence level and a 5% error level for the study.

### **2.3. Method of Data Collection**

Primary data was used for the study. Primary data via questionnaire was administered to the respondents and serve as our source of data collection.

### **2.4. Administration of Instrument**

The instrument for the study was research questionnaire. In-dept interview was also structured to

throw more light on the subject matter. The questionnaire was distributed by the researcher together with the aid of enumerators.

### 3. Results and Findings

#### 3.1. Secondary school agriculture curriculum and guaranteed effective skills acquisition

In the output below, we first see the iteration log, indicating how quickly the model converged. The log likelihood (-108.08106) can be used in comparisons of nested models, but we won't show an example of that here. Also, we see that all 332 observations in our data set were used in the analysis (fewer observations would have been used if any of our variables had missing values). The likelihood ratio chi-square of 4.42 with a p-value of 0.1098 tells us that our model as a whole does not fit significantly better than an empty model (i.e., a model with no predictors). In the Table below, we see the coefficients, their standard errors, the z-statistic, associated p-values, and the 95% confidence interval of the coefficients. Most variables, **SA1**, **SA2**, **SA4** and **SA5** are statistically significant. The logistic regression coefficients give the change in the log odds of the outcome for a one unit increase in the predictor variable. For every one unit change in **secondary school agriculture curriculum**, the log odds of **skill acquisition** increases. The alternative hypothesis (**H1**) was accepted, which states that, “*the content of the secondary school agriculture curriculum have significant marginal effect on guaranteed effective skills acquisition.*”

**Table 1:** Secondary school agriculture curriculum and guaranteed effective skills acquisition

skill acquisition	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
SA1	0.8814681	0.5269471	1.67*	0.094	-0.1513292	1.914265
SA2	-1.393964	.7411445	-1.88*	0.060	-2.846581	.0586521
SA3	-.2700941	1.053118	-0.26	0.798	-2.334167	1.793979
SA4	1.184944	.5663964	2.09*	0.036	.0748275	2.29506
SA5	3.566081	1.055971	3.38**	0.001	1.496417	5.635746
_cons	-1.692806	0.7727061	-2.19	0.028	-3.207283	-0.1783302

**Note:** Number of obs =332; LR chi2(2) = 4.42; Prob > chi2 = 0.1098; Log likelihood = -108.08106; Pseudo R2 = 0.0200; \*,\*\* = significant at 10% and 1% respectively; SA1=Curriculum should be arranged in modular packages; SA2=Team teaching based on specialization should be adopted; SA3=Curriculum should be compartmentalized; SA4=Every practical lesson should be preceded by its theoretical lesson; SA5=Tasks implied in skill lesson must be analyzed preparatory to the actual teaching

**Source:** STATA 8

This study agrees with the study of Kiadese (2011) which revealed a relatively low teaching effectiveness among prevocational subject teachers. This results is in consonance with the findings of (Agbatogun, 2006; Brewer, 2007; Scriven, 2008; Adetayo, 2008) that teaching effectiveness of teachers is relatively low and counter productive to students achievement. Agbatogun further reported that, teachers in recent time lack knowledge of modern teaching and strategic assessment technique. In similar vein Adetayo asserted that Nigerian teachers cannot utilize modern pedagogy that is technology driven. The low teaching effectiveness of teachers can be said to have been responsible for students' poor performance in school subjects in various public examinations conducted for students in Nigeria. The students under achievement are alarming, most especially in the prevocational subjects.

#### **4. Conclusion**

Apart from the poor state of infrastructure which has negatively influenced the teaching of science in the State, the agricultural science teachers themselves are not well positioned to teach agricultural science effectively. Their deficiencies range from the use of inappropriate teaching methods for teaching agricultural sciences, through lack of commitment and dedication to inaccurate assessment of students learning outcome in agricultural science. Effective skill acquisition however, may not be guaranteed due to these challenges.

#### **5. Recommendation**

- i. Government and agency responsible for teacher development should be put in place;
- ii. an action plan to enhance the capacity of teachers in the use of ICT driven pedagogy, modern classroom practices and assessment techniques are needed;
- iii. the technical teacher training scheme should be resuscitated;
- iv. positioning the country towards the realization of vision 2020 through prevocational education should be emphasized; and
- v. agribusiness contents for vocational agricultural science teaching should be improved upon.

#### **References**

- Agwubuike C.C. (1985). The Place of Professional Teachers in Vocational Subjects. *Education Today*, 3 (2).
- Alaja, A.A. (2008). Availability of Educational Resources for Effective Teaching of Pre-Vocational Agricultural Sciences in Secondary Schools in Anambra State. *A Journal of Research in Learning and Teaching*, 1.
- Akuoba, E.U. (1995). Curriculum Decision in Our Education System. Lead Paper Presented at the 9th National Conference of the Technological Writer Association of Nigeria (TEWAN) held at FCE (Technical) Umunze.
- Amadi, U.P.N. (2010). Availability and Utilization of Instructional Resources in Teaching and Learning Agricultural Occupation Skills in Taraba state Secondary Schools Unpublished PhD Thesis Nnamdi Azikwe University , Awka.
- Amadi, U.P.N. (2011). Availability and Utilization of Instructional Resources in Teaching and Learning of Agriculture in Primary schools in Anambra State of Nigeria. Lead paper

- presented at Inaugural Workshop/Orientation for primary school teachers held at Awka 12-16 July.
- Amadi, U.P.N. Orikpe E.A. & Osinem E.C. (2007). *Introduction to Vocational Technical Education*. Owerri: The Alphabet Publishers Ltd.
- Akanmu, S.A., Olorundare, A.S. and Uphai, J. (2016). How Effective is the Nigerian Senior School Agricultural Science Curriculum? A Survey of Evidence from Content Development to Product. *European Scientific Journal*, 12(4): 395-405.
- Famiwole, R.O., Odu, B.K., Popoola, A.A. and Ayodele, M.O. (2014). Appraisal of the Impact of Agricultural Science Teachers Computational Skills on Student's Learning Outcomes in Secondary Schools, Nigeria. *Mediterranean Journal of Social Sciences*, 5(10): 719-725.
- Federal Republic of Nigeria (2013). *National Curriculum for Secondary school agricultural science*. Lagos, Nigeria.
- Federal Ministry of Education (FME) (2008). *National Curriculum for Senior Secondary Schools*. Ibadan: Heinemann Educational books (Nig) Ltd.
- Ivonwi, U. (1997). Competences required of teachers in the 6-3-3-4 system of education for the secondary schools. In: Ben Akpan (Ed): *Perspectives on Education and Science Teaching from the Eyes of Uduogie Ivowi*. Abuja: Foremost Educational Service Ltd., pp.125-132.
- Nigerian Educational Research and Development Council (NERDC *Senior Secondary School e-Curriculum Agricultural Science for SS 1 – SS 3: 2012*. Available at [www.nerdc.ng](http://www.nerdc.ng). Retrieved 07/10/2014.
- Nwabuisi, G.M. (1993). A Survey of Resources for Teaching and Learning Agricultural Science in Lagos State Junior Secondary Schools. *ANDRIAN FORUM*, 6 (1 & 2). Journal of the St. Andrews College of Education, Oyo.
- Ochu, A.O. & Umunnagbu, M.I. (2005). An Assessment of the Effectiveness of the Senior Secondary School Agricultural Education Programme in Manpower Development in Nigeria. *Journal of Teacher Education* V (2).
- Okorie, J.U. (2007). Instructional Facilities for Growing Vocational and Technical Institutions in Nigeria. Lead Paper Presented at the National Conference on Vocational Education held at federal College of Education (Tech) Umuze 11 – 15th August.
- Olaitan, S.O. (2009). Strategies for Meeting the Demands for Effective Teaching of Introductory Technology in Junior Secondary Schools of Anambra State. Seminar Paper Presented at the University of Nigeria, Nsukka.
- Olaitan, S.O. & Uwadiae, S.A. (2003). Rationale for Re-thinking the Agricultural Science Curriculum for Secondary Schools. In B.G. Nworgu (Ed.) *Curriculum Development, Implementation and Evaluation*. Nsukka; Association for the Promotion of Quality Education in Nigeria (APQEN).
- Olaitan, S. O. & Uwadiae, S. A. Developing curriculum in agriculture. In: *Curriculum development in Nigeria*. Ivowi, U.M.O. (Ed.). Ibadan. Sam Bookman. 1993.
- Olusanya, P.O. (1990). Socio economic aspects of rural-urban migration in western Nigeria. In: O. Otite & C. Okali, *Readings in Nigeria rural society and rural economy* (pp. 227-252). Ibadan. Heinemann educational Books Limited.:1990.
- Onuekwusi, G. C. & Okorie, L. (2008). Attitude of secondary school students in Abia State towards career in Agriculture. *Agricultural Journal*, 3 (2): 102-106.
- Ronald, L. H. *Perceptions of students and teachers regarding agriculture in Leflore County*,

- Mississippi*. M.Sc. thesis in agricultural education submitted to College of Agriculture, Forestry, and Consumer Sciences, West Virginia University, Morgantown, West Virginia:1999.
- Kiadese, A.L. (2011). An assessment of the teaching effectiveness of prevocational subjects teachers in Ogun State Nigeria. *International Journal of Vocational and Technical Education*, 3(1): 5-8.
- Ndem J.U. and Akubue B.N. (2016). Status of Teaching Pre-Vocational Subjects in the Junior Secondary School Level (Agricultural Science and Home Economics). *British Journal of Education*, 4(4):75-85.
- Zahradeen, U.A. (1990). Integrating productive Work into Vocational and Technical Education in Nigeria. *Technical Education Today*, 2 (1).