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Assessment of Agricultural Science Teachers' Perception about the Content of Agricultural Science Curriculum

Umar Adamu Haruna[1] and Ogidi, Armstrong Emmanuel[2]
[1]Department of Agricultural/Home Economic Education, College of Education, Michael Okpara University of Agriculture, Umudike, Nigeria | E-mail: umaradamu1966@gmail.com
[2]Department of Agribusiness and Management (ABM), College of Agricultural Economics, Rural Sociology and Extension (CAERSE), Michael Okpara University of Agriculture, Umudike, Nigeria | E-mail: armstrongogidi@gmail.com | Tel: +2348036228671

Abstract: *The teaching of agricultural science subjects in secondary schools has not been encouraging. The main aim of the study was to assess agricultural science teachers' perception about the content of the agricultural science curriculum. 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. The work focused on the availability of instructional materials, academic qualifications of teachers, cooperation of the school administration and teaching methods adopted by the teachers. The problem of poor teaching of sciences in our schools can therefore be hinged on the dearth of resources for teaching science, large class sizes of agricultural science students, very few qualified science teachers and competency problems' arising from the poor training of agricultural science teachers. The study concludes that existence of these problems is known to influence effective teaching and learning of agricultural science. School supervisors should monitor the teachers output. Supervisors should ensure that all areas of the curriculum, including contents requiring computations, are adequately covered. The curriculum should be updated and improved upon as at when due to meet universal standards.*

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

1. Introduction

The number of years agricultural science is taught as a school subject varies from one school to the other depending on the administration of the school as well as the availability of teachers. Agricultural Science as one of the WAEC subject is taught theoretically and practically. The school farm or garden is often used as a means of providing practical experience for the students. The relevance of the current senior secondary vocational agriculture curriculum has raised divergent views from different stakeholders. Ochu and Umunnagbu (2005) opined that secondary school agricultural programmes are suitable for developing the right caliber of middle level manpower for the agricultural subsector of the economy.

Nwabuisi (2003) reported dearth of instructional resources for teaching agriculture at vocational level in the secondary schools. Harping on the various limitations of the curriculum, Uwadiae (2003) observes that most schools have been unable to teach for the acquisition of occupational skills rather than knowledge needed to pass prescribed examinations. This has

been blamed on absence of enabling environments due to poor infrastructural facilities in school.

The introduction of agricultural science curriculum in secondary schools makes a lot of demands teachers as stakeholders. The effectiveness of any teaching is relatively a function of teaching styles, methods and strategies which were employed in the process. Quite regrettably, there is dearth of professionally qualified teachers of agriculture in the school system. Nwabuisi (2002) in a study on resources for teaching and learning agriculture science in Lagos State Junior secondary schools reported a low teacher/student ratio of 1:60. In a later study conducted in Taraba state, Amadi (2010) also reported a low teacher/student ratio of 1:158, which is just a marginal improvement on Nwabuisi's. Though as reported by Amadi, (2010) there are more qualified teachers of agriculture these days, the imbalance stems from the population explosion since every student is expected to offer the subject.

1.1. Research Questions

How do the agricultural science teachers perceive the content of the agricultural science curriculum?

1.2. Objective of the Study

The aim of the study was to assess agricultural science teachers' perception about the content of the agricultural science curriculum.

1.3. Research Hypothesis

H0: Agricultural science teachers' perception about the content of the agricultural science curriculum is not adequate

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; $(e)^2$ = 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. Agricultural science teachers' perception and agricultural science curriculum

The iteration log below, indicates how quickly the model converged. The log likelihood (-101.94541) can be used in comparisons of nested models, but we won't show an example of that here. All 332 observations in our data set were used in the analysis. The likelihood ratio chi-square of 16.69 with a p-value of 0.0002 tells us that our model as a whole does 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, PA1, PA2, PA3 and PA4 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 agricultural science teachers, the log odds of agricultural science curriculum increases. The null hypothesis was rejected and the alternative hypothesis (**H1**) was accepted, which states that, *"agricultural science teachers' perception about the content of the agricultural science curriculum is adequate*."

Table 1: Agricultural science teachers' perception and agricultural science curriculum

agric sci. curr.	**Coef.**	**Std. Err.**	**z**	**P>|z|**	**[95% Conf. Interval]**	
PA1	0.0001174	0.000031	3.78**	0.000	0.0000566	0.0001783
PA2	0.0002013	0.0000941	2.14*	0.032	0.0000169	0.000385
PA3	3.059802	1.322788	2.31*	0.021	.4671845	5.6524
PA4	1.764977	.826878	2.13*	0.033	.1443255	3.385628
PA5	.9217208	.572469	1.61	0.107	-.2002978	2.043739
_cons	-2.745728	0.709922	-3.87	0.000	-4.137149	-1.354306

Note: Number of obs =332; LR chi2(2) = 16.69; Prob > chi2 = 0.0002; Log likelihood = -101.94541; Pseudo R2 = 0.0757; *,** = significant at 10% and 1%; PA1=agricultural science curriculum is readily available to all agric-teachers; PA2=familiar with the contents and objectives of the curriculum; PA3=The contents are adequate to meet objectives; PA4=The major themes are adequate for the objectives; PA5=The spiral approach of presentation of the curriculum is appropriate

Source: STATA 8

Our finding agrees with the work of Famiwole, Odu, Popoola and Ayodele (2014) which stipulate that students were found to be faced with poor mathematical problem solving skills in Agricultural Science. Skill, according to Hull (1992), was defined as manual dexterity acquired through the repetitive performance of an operation. According to Hornby (1980), skills involve the ability to do something expertly well. Aderogba (2011) expressed skills as the possession of expertise needed to perform a particular job or tasks and in essence, it ought to consist of habit that ensures adaptation. Olaitan (2010) posits that although students might have studied Mathematics in school as a subject, teachers of Agricultural Science or Agricultural Education should not overlook the teaching of the application of Mathematics to Agriculture. According to him, Mathematics is very important in calculating the area of the school farm, yield of crop per hectare, profit or loss accruing from farm enterprise, amount of feed needed per head of animal per unit body weight gain, amount of work done by tractor to ascertain efficiency, the bulk density of soil, soil PH, soil analysis experiments and rate of fertilizer application among others.

4. Conclusion

The teaching of agricultural science subjects in secondary schools has not been encouraging. The work focused on the availability of instructional materials, academic qualifications of teachers, cooperation of the school administration and teaching methods adopted by the teachers. The result of the study showed that instructional materials were available, school administrations co-operated, teachers were highly qualified and the teachers adopted demonstration, project, field trip and assignment which are ideal for teaching of agricultural science programme. The problem of poor teaching of sciences in our schools can therefore be hinged on the dearth of resources for teaching science, large class sizes of agricultural science students, very few qualified science teachers and competency problems' arising from the poor training of agricultural science teachers. The existence of these problems is known to influence effective teaching and learning of agricultural science.

.5. Recommendation

i. School supervisors should monitor the teachers output;
ii. Supervisors should ensure that all areas of the curriculum, including contents requiring computations, are adequately covered; and
iii. the curriculum should be updated and improved upon as at when due to meet universal standards.

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