

Capacity Building Requirements of Teachers of Agriculture in Pig Production for Poverty Reduction in South Western Nigeria

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Abstract

This study focused on capacity building needs of teachers of agriculture in pig production for poverty reduction in south western Nigeria. Five research questions guided the study. The study made use of survey research design. The population of the study was 678 secondary school teachers of agriculture while the sample was 301 randomly selected from the population of the study. Competency Based Questionnaire (CBQ) was developed and used for data collection. It was validated by three experts. Cronbach alpha method was used in determining the reliability of the study which yielded a coefficient value of 0.82. Three hundred and one (301) copies of the questionnaire were administered to the respondents through the help of four research assistants. All the 301 copies of the questionnaire were retrieved and analyzed using weighted mean and improvement required index (IRI) to answer the research questions. It was found out that teachers required capacity building in pig production competencies in planning, housing management, feeding of pigs, health management and marketing of pig products. It was therefore recommended that the health management competencies identified be packaged and utilized for retraining teachers of agriculture through seminars and workshops in order to empower them with competencies in pig production for earning extra income through sales of pig products for alleviating the poverty level of their family members.

KEY WORDS” *Capacity building, Pig production, Poverty and Teachers of Agriculture.*

Introduction

Pig production is a farming enterprise that involves raising of pigs for pork and for economic purposes. Pond (1994) defined pig production as the portion of animal agriculture devoted to the conversion of feed resources into pork. According to Ponds, the enterprise can be in form of small backyard business in which household kitchen waste and locally ground feedstuff are fed to pigs to provide pork for home use. Pig production in this study is the rearing of weaned pigs to market weight using concentrates, household kitchen wastes and local feedstuff materials available in the environment. Eusebio (1988) listed the importance of pig production to include the following: it helps in effective utilization of household and kitchen waste materials; it ensures speedy returns of investment within a short period; it ensures efficient conversion of waste materials of plants and offal of livestock, etc into pork.

Rearing of pigs using feedstuff materials available in the environment can lead to income generation with minimal cost. This enterprise can be embarked upon by a secondary school

teacher who has acquired the necessary skills in pig production to increase his income. A teacher is an individual who has been trained professionally to impart knowledge, skills and attitudes to a learner in an institution. Obanewa (1994) stated that a teacher is someone who has undergone the necessary and recommended training in a teacher preparatory programme and is charged with the full responsibility of managing the classroom in such a way as to enhance learning. In this study, a teacher is referred to as a person trained professionally to teach agricultural science in secondary schools. Adewale, Oladejo and Ogunniyi (2005) stated that majority of Nigerians including teachers of agriculture have the potentials and most tendencies to develop interest in farming if their training needs are justifiably satisfied and their interests are well motivated in the profession. The level of skill possessed by the teachers is a major factor in determining their interest in any agricultural enterprise. The teachers of agriculture appear not to have been well exposed to rudimentary training in pig production during their pre-service training programme; a situation which has continued to discourage them from embarking on agricultural enterprises particularly in pig production. Specifically, teachers of agriculture required improvement in skills and competencies for effectiveness in teaching and engagement in profitable livestock production for sustainable livelihood during service and after retirement (Obika 2006 and Olaitan, Ifeanyieze and Omeje, 2008). The Federal Government of Nigeria in National Policy on Education (2013) stated that secondary school is where children receive secondary education after primary education. A secondary school teacher of Agriculture is employed to teach Agricultural Science to learners at this level of schooling and is paid salaries on which he and his family members depend for meeting their needs.

Family as explained by Olaitan and Akpan (2003) is a structural unit composed of man and woman joined in socially recognized union and their children. These children are normally their biological children except in the case of adoption. Olaitan and Akpan (2003) further described family as a group of two or more persons related by blood, marriage or adoption and residing together. In this study, family is the household to which the teacher of agriculture belongs either as a parent or offspring. The teacher of agriculture earns income through paid employment. This may not be enough to cater for the needs of his family members. The teacher can be retrained with required skills in pig rearing and embark on its production for enhanced income towards alleviating poverty of their family members.

Poverty is explained by Hornby (2004) as a state of being poor. To be poor, the author said is to have little and unable to have the necessities of life. Poverty in this study is the situation in which the family to which the teacher is a member cannot have the necessities of life. The teacher can make effort to reduce poverty in the family by branching out to non-agriculture business such as selling of food, snacks and provisions. This effort by the teacher can affect the teaching and learning process in school as it could distract his teaching activities, increases stress and reduces the efficiency of his teaching profession. The teacher of Agriculture could be helped to alleviate poverty and still perform well in his teaching career by developing proficiency in related occupation such as pig production.

For a successful business in pig production, the teacher must be competent. Competency as defined by Olaitan and Ali (1997) is the successful performance of a task through the use of knowledge, skills, attitudes and judgment. It can be referred to as the state of being functionally adequate in the performance of ones duty. For effective demonstration of competence, the teacher requires capacity building. Capacity building is efforts towards improving an individual's level of knowledge skills and attitudes required in carrying out specified activities in a given

task. Capacity building in this study refers to efforts aimed at improving the level of knowledge, skills and attitudes required by the teacher of agriculture to demonstrate competence in the step-by-step activities (tasks) involved in raising weaned pigs to market weight towards generating money for enhanced family income.

Purpose of Study

The purpose of this study therefore, was to determine capacity building needs of secondary school teachers of Agriculture in pig production for poverty reduction in South Western Nigeria. Specifically, the study sought to answer the following research questions:

- 1 What are the capacity building needs of teachers of agriculture in planning competencies in pig production?
2. What are the capacity building needs of teachers of agriculture in housing management competencies in pig production?
- 3 What are the capacity building needs of teachers of agriculture in feeding competencies in pigs production?
- 4 what are the capacity building needs of teachers of agriculture in health management competencies. in pig productions?.
5. What are the capacity building needs of teachers of agriculture in marketing competencies in pig productions?

Methodology

Survey research design was used for the study. Survey research design in the view of Olaitan, Ali, Eyo and Sowande (2000) is a design that employs the study of large and small populations by selecting and studying sample chosen from the population to discover the relative incidence, distribution and interrelations of sociological and psychological variables through the use of interview or questionnaire. The study was carried out in southwestern Nigeria comprising Ekiti, Osun, Ondo, Oyo, Ogun and Lagos States. The population for the study was 678 senior secondary school teachers of agriculture in the area of study.

The sample for the study was 301. This was selected through stratified sampling technique in respect of the schools in each state and the number of teachers of agriculture. The instrument was face validated by three experts; two from Animal Science Department and one from Vocational Teacher Education Department, all from University of Nigeria, Nsukka. Their corrections and suggestions were used to produce the final copy of the questionnaire.

Cronbach alpha method was involved in determining the reliability of the instrument which yielded a co-efficient value of 0.82. A 45 item-competency based questionnaire (CBQ) covering: planning, housing management, feeding, health management and marketing of pigs was developed for collecting data from the respondents. The questionnaire was categorized into two, tagged Required and Performance. The required category had a 4-point response scale of Highly Required (HR), Averagely Required (AR), Slightly Required (SR) and Not Required (NR) with corresponding nominal values of 4, 3, 2 and 1 respectively. The performance category had a response scale of High Performance (HP), Average Performance (AP), Low Performance (LP) and No Performance (NP) with corresponding nominal values of 4, 3, 2 and 1 respectively. Three hundred and one (301) copies of the questionnaire were administered to the respondents with the help of four research assistants. All the copies of the questionnaire were retrieved and analyzed.

Weighted mean and Improvement Required Index (IRI) were used to determine the capacity building needs of the respondents. It was determined as follows:

- a. The mean (\bar{X}_r) of the required category was determined for each item.
- b. The mean (\bar{X}_p) of the performance category was also determined for each item.
- c. The performance gap (PG) was determined by finding the difference between \bar{X}_r and \bar{X}_p for each item, that is $PG = \bar{X}_r - \bar{X}_p$.

Where PG is positive (+), it means that capacity building is required because the rate at which the teachers performed is lower than what is needed. Where PG is negative (-) it means that capacity building is not required because the rate at which the teachers performed is greater than the level required. Where PG is zero (0), capacity building is not required because the rate at which the teachers performed is equal to what is required.

RESULTS

The results for the study were obtained from the research questions answered through data collected and analyzed.

Research Question 1

What are the capacity building needs of teachers of agriculture in planning competencies in pig production?

The data for answering research question 1 are presented in Table 1.

Table 1: Performance Gap Analysis of the Mean Ratings of the Responses of the Teachers of Agriculture in Planning Competencies in Pig Production.

(N = 301)

S/N	Competency Items in Planning	\bar{X}_n	\bar{X}_p	(PG) $\bar{X}_n - \bar{X}_p$	Remarks
1.	Formulate specific objectives for pig production.	2.68	1.98	0.70	Capacity Building Required
2.	Revise the objectives of pig production based on changes in market demand and supply.	2.92	2.00	0.92	“
3.	Draw up programme plan for pig production.	3.10	2.25	0.85	“
4.	Budget for pig production.	2.96	2.48	0.48	“
5.	Procure inputs for pig production.	2.88	2.70	0.18	“
6.	Identify relevant market for pig produced.	2.75	2.01	0.74	“
7.	Identify the breed of pig to rear.	3.04	3.06	-0.02	Capacity Building Not Required.

Table 1 revealed that performance gaps of 6 out of the seven items are positive and ranged from 0.18 to 0.92. This indicated that the teachers required capacity in the 6 competency items. One of the seven competencies had a negative performance gap of -0.02. This indicated that the teachers did not require capacity building in that item. Generally, the result revealed that teachers of agriculture required capacity building in planning competencies in pig production.

Research Question 2

What are the capacity building needs of teachers of agriculture in housing management competencies in pig production?

The data for answering research question 2 are presented in Table 2.

Table 2: Performance Gap Analysis of the Mean Ratings of the Responses of the Teachers of Agriculture in Housing Management competencies in Pig Production.
(N = 301)

S/N	Competency Items in Housing Management of Pigs	\bar{X}_n	\bar{X}_p	(PG) $\bar{X}_n - \bar{X}_p$	Remarks
Cluster A: Housing of Weaner Pigs					
1.	Clean troughs regularly for sanitary purposes.	3.12	2.07	1.05	Capacity Building Required
2.	Provide proper spacing for weaned piglets.	2.08	1.81	0.27	“
Cluster B: Housing dry Sows and Gilts					
3.	Provide play areas in the pig pen.	2.73	2.88	-0.15	Capacity Building Not Required
4.	Clear animal wastes or dung daily.	2.93	2.01	0.92	Capacity Building Required
Cluster C: Housing Management of Boars					
5.	Make available concrete feed and water troughs.	3.01	2.73	0.28	“
6.	Protect boars by fencing of exercise areas.	3.24	2.03	1.21	“
7.	Make strong pens for boars.	2.86	2.66	0.2	“
Cluster D: Housing Management of Growers					

8.	Clean pig pen regularly.	3.16	3.08	0.08	“
9.	Provide adequate ventilation.	2.66	2.70	-0.04	Capacity Building Not Required
10.	Keep 8 – 10 growers or fatteners in each pen.	2.77	2.02	0.75	Capacity Building Required

Table 2 revealed that performance gaps of 8 out of the 10 items are positive and ranged from 0.08 to 1.21 indicating that the teachers required capacity building in the eight (8) competency items. Two out of the ten items had negative performance gaps of -0.04 and -0.15 indicating that the teachers did not require capacity building in the two competency items. On the average, teachers require capacity building on the housing management of pigs.

Research Question 3

What are the capacity building needs of teachers of agriculture in feeding competencies for pigs?

The data for answering research question 3 are presented in Table 3

Table 3: Performance Gap Analysis of the Mean Ratings of the Responses of the Teachers of Agriculture in Feeding competencies in Pigs production.

(N = 301)

S/N	Competency Items in Feeding of Pigs	\bar{X}_n	\bar{X}_p	(PG) $\bar{X}_n - \bar{X}_p$	Remarks
Cluster A: Feeding of Weaners and Growers					
1.	Include antibiotics in weaner and grower rations.	3.00	2.03	0.97	Capacity Building Required
2.	Provide protein and concentrate diet to growers of 20 – 60 kg live weight.	2.77	1.93	0.84	“
Cluster B: Feeding of Dry Sows and Gilts					
3.	Provide fresh cool drinking water to pigs on regular basis.	3.42	3.44	-0.02	Capacity Building Not Required.
4.	Give 2.7 kg of concentrate feed daily to dry sows and gilts.	2.06	2.00	0.06	Capacity Building Required.
5.	Supplement feeding of pigs with household wastes.	2.80	1.99	0.81	“
Cluster C: Feeding of Boars					
6.	Give green vegetables and balanced diets daily.	3.02	2.92	0.10	“
7.	Provide 2.3 kg full ration of balanced diet for boars less than 15 months of age.	2.01	0.60	1.41	“

8.	Feed boars in-doors and on individual basis.	3.18	2.03	1.15	“
9.	Feed boars 2 times daily.	2.72	2.08	0.64	“
Cluster D: Feeding of Finisher/ Fatteners.					
10.	Provide wet ration if manual feeders are involved.	2.41	2.04	0.37	“
11.	Give bulky feed ingredients including household wastes.	2.68	2.00	0.68	“
12.	Provide fresh cool drinking water and libitum.	2.99	3.02	-0.03	Capacity Building Not Required.
13.	Feed 3.0 kg of balanced diet to finisher more than 15 months old.	2.87	2.61	0.26	Capacity Building Required.

Table 3 indicated that the performance gap of 11 out of the 13 competency items ranged from 0.06 to 1.15. They are positive which indicated that the teachers require capacity building in the eleven competency items. Two out of the thirteen items had a performance gap of -0.02 and -0.03 which are negative. This indicated that the teachers did not require capacity building in the two competency items. On the overall, the result revealed that the teachers require capacity building in feeding of pigs.

Research Question 4

What are the capacity building needs of teachers of agriculture in health management competencies in pig production?

The data for answering research question 4 are presented in table 4.

Table 4: Performance Gap Analysis of the Mean Ratings of the Responses of Teachers of Agriculture in Health Management competencies in Pig production.

(N = 301)

S/N	Competency Items in Health Management of Pigs	\bar{X}_n	\bar{X}_p	(PG) $\bar{X}_n - \bar{X}_p$	Remarks
1.	Purchase healthy weaned pigs from reputable sources.	3.06	2.64	0.42	Capacity Building Required
2.	Keep newly purchased weaned pigs 3 weeks away from other pigs (quarantine).	2.86	2.52	0.34	“
3.	Maintain adequate sanitation in pig pens to prevent ill-health.	2.88	2.92	-0.04	Capacity Building Not Required.
4.	Disinfect disease-infected premises with appropriate chemicals.	2.77	2.08	0.69	Capacity Building Required.
5.	Put foot dips at the entrance to pig pens.	2.92	2.90	0.02	“

6.	Protect feed and water from contaminants.	3.10	2.05	1.05	“
7.	Deworm pigs regularly.	2.69	1.87	0.82	“
8.	Keep sick pigs for treatment away from healthy ones (isolation)	2.47	1.69	0.78	“
9.	Send sick pigs to veterinary doctors for treatment.	2.63	2.60	0.03	“

Table 4 revealed that the performance gap of eight (8) out of the nine (9) items ranged from 0.02 to 1.05 and are positive indicating that the teachers require capacity building in the eight (8) competency items. One out of the nine (9) items had a performance gap of -0.04 which is negative indicating that teachers did not require capacity building on this one item. On the average, the result revealed that the teachers require capacity building in health management competencies in pig production.

Research Question 5

What are the capacity building needs of teachers of agriculture in marketing competencies in pig production?

The data for answering research question 5 is presented in table 5.

Table 5: Performance Gap Analysis of the Mean Ratings of the Responses of Teachers of Agriculture in Marketing competencies in Pigs production.

(N = 301)

S/N	Competency Items in Marketing of Pigs	\bar{X}_n	\bar{X}_p	(PG) $\bar{X}_n - \bar{X}_p$	Remarks
1.	Determine market weight of pigs by weighing regularly.	2.59	1.92	0.67	Capacity building required
2.	Advertise pigs for sale.	2.61	2.00	0.61	“
3.	Fix prices on pigs for sale.	3.02	2.81	0.21	“
4.	Sell weaners at specified rates per kg body weight.	2.89	2.02	0.87	“
5.	Negotiate for highest bidders in the sale of pigs.	2.53	1.97	0.56	“
6.	Keep record of sales of pigs.	3.11	2.07	1.04	“

Table 5 showed that the performance gap of all the six (6) competency items ranged from 0.21 to 1.04. They are all positive indicating that the teachers require capacity building in marketing of pigs.

Discussion of Results

The result of the study revealed that teachers of agriculture require capacity building in the following competency areas of pig production: planning, housing management, feeding of pigs, health management and marketing of pigs. The result of this study is in conformity with the findings of a study conducted by Obika (2006) on the technical in-service needs of agriculture lecturers in pig production in the colleges of education in the southeastern states of Nigeria.; where he found out that agriculture lecturers required in-service training in pig farm management competencies, breeding practice competencies, feed formulation competencies, health care management competencies in pig production, housing facilities and equipment maintenance competencies in pig production. Also in consonance with the result of this study is the finding of a study carried out by Olaitan, Ifeanyieze and Omeje (2008) on the development of entrepreneurial skill training programme in micro-livestock (Beekeeping) for reengagement of retirees in a sustainable occupation in Enugu State. Some of the retirees used for the study are retired teachers of agriculture who want to continue their existence in any desirable but less strenuous occupation like livestock rearing. The findings of their study revealed that for the retirees to reengage in beekeeping, they required some training in planning for bee keeping enterprise, selection and construction of bee hives, stocking and feeding of bees, managing bees, harvesting and marketing of bee products. This finding is in consonance with the findings of These findings agreed with the finding of Ukonze(2010) who stated that instructors needed skills for effective teaching of vegetable production in Universities. This will ensure that teachers are retrained to enhance effectiveness in performing their specified functions.

Conclusion

It has been observed in the study area that secondary school teachers including teachers of agriculture receive low monthly income that could hardly cope with the needs of their family members such as housing, education of children, food for the family, dresses and other wears, social and cultural functions to mention a few. These demands on the meager income of the teachers render them to be very poor and further worsen the economic situation in the study area. In attempt to continue to survive, many of them branched out into non-agricultural businesses such as provision store, retail clothes, sales on credit, fast food sales to students, sale of drinks, motorcycle riding (okada) and so on. These attracted investment from the low income of the teachers and without appreciable marginal profit but with adverse effect on teachers' effective teaching in the school.

If the teachers are trained to engage in subject related occupation such as in pig production, it will help to increase their income for poverty reduction and at the same time make them become more effective in teaching while students will learn better. This study has identified areas where the teachers required capacity building in order to enter into pig production for success.

Recommendations

Base on the findings the following recommendations were made.

1. The Ministry of Education should develop the competencies identified in planning into a package and use it in training teachers of agriculture on pig production in south –west, Nigeria.

2. The teacher training institutions should include the identified feeding management competencies in the curriculum of teachers in training in their institutions.
3. The competencies identified on marketing of pig products should be developed into package and send to skills acquisition centres for training of individuals for poverty reduction.
4. Health management competencies indentified in this study can be used by teachers to teach students in secondary schools on pig production so that those willing to engage in pig production can be equipped with the skills to reduce unemployment.

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