

**EFFECTIVE PLANNING AND BREEDING SKILLS FOR SUSTAINABLE
POULTRY PRODUCTION IN SENIOR SECONDARY SCHOOLS IN SOUTH-
EAST ZONE, NIGERIA**

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Abstract

The study was carried out to examine the practical skill needs for sustainable poultry production in senior secondary schools in South-East, Nigeria. The study was guided by nine research objectives, as nine research questions were posed for the study and eight corresponding null hypotheses were tested at 0.05 level of significance. The study adopted a descriptive research survey design. The population of the study comprised 1,945 Agricultural Science teachers and 6,280 registered poultry farmers. The sample was made up of 54 teachers and 52 poultry farmers selected based on multi-stage sampling. The instrument for data collection was practical skill needs for sustainable poultry production questionnaire (PSNSPPQ) the instrument was subjected to face validation by five experts in Agricultural Science Education, Veterinary Medicine and Measurement and Evaluation. The reliability index of PSNSPPQ was established using Cronbach Alpha. The reliability index for the whole instrument was 0.92 while the reliability indices for the subscales were planning skills (0.85) and breeding management skills (0.92). Data collected were analyzed using mean and standard deviation for research questions while t-test for independent means was used to test the hypotheses at 0.05 level of significance. The study found that the planning and breeding management skills for poultry production were rated highly needed (HN). The study then recommended that the planning skills and breeding management skills should be integrated in the revised curriculum of agricultural science among others.

Keywords: Planning Management Skills, Breeding Management Skills, Sustainable, Poultry production, Secondary Schools.

INTRODUCTION

Agriculture is the science, art, and practice of cultivating soil, growing crops, and raising animals for food, fiber, and other products used to sustain and enhance human life. It involves a range of activities such as planting, harvesting, irrigation, and livestock management. (Obi and Ugochukwu, 2023). Agricultural science at the senior secondary school level provides students with the essential knowledge and skills needed to understand and engage in agricultural industry, which is crucial for both national development and food security. By exposing students to various agricultural practices, such as crop and livestock production, soil management, and farm machinery use, secondary schools prepare students to contribute to the agricultural sector. Students who receive Agricultural science in secondary schools are better equipped to pursue agricultural careers, thus supporting the nation's economic growth and development (Ijioma *et al.*, 2020). Moreover, Agricultural science fosters critical thinking and problem-solving skills by allowing students to address real-world agricultural challenges such as food insecurity, resource management, and environmental sustainability.

Another key benefit of Agricultural science in secondary schools is its ability to promote entrepreneurship among students. Agricultural science offers numerous entrepreneurial opportunities, including the cultivation of crops, rearing of animals, agro-processing, and agricultural product marketing. By learning about the agricultural value chain, students are encouraged to develop innovative solutions to improve agricultural productivity and efficiency. This entrepreneurial mindset can be fostered through hands-on activities such as school farming projects, agricultural fairs, and practical demonstrations. According to Asadu and Ibeneme (2021), students who engage in these activities acquire the confidence and skills necessary to establish their own agricultural enterprises after graduation, thereby reducing unemployment and contributing to the development of local economies. Furthermore, Agricultural science helps students develop a business-oriented approach to farming, teaching them how to calculate profits, manage resources, and market their produce effectively.

Poultry farming offers an accessible entry point into the livestock sector for young people, especially in resource-constrained settings. Chickens, quails, and turkeys require comparatively less land and investment than ruminants, making them suitable for integration into school environments (FAO, 2023). Beyond livestock rearing, poultry education introduces learners to a range of interdisciplinary competencies including feed formulation, recordkeeping, biosecurity, breeding techniques, marketing, and waste management. These competencies align with emerging international standards for Education for Sustainable Development (ESD) and Competency-Based Education and Training (CBET) frameworks, which emphasize learner outcomes that are measurable, transferable, and directly linked to societal needs (UNESCO, 2022; Musila and Okonkwo, 2023). Yet, in Nigeria, and particularly in the Southeast region, anecdotal evidence and scattered research suggest that many schools lack the infrastructure, trained teachers, and curriculum integration needed to deliver these outcomes (Ezekiel *et al.*, 2024).

Pedagogical innovations such as simulation tools and technology-enhanced learning are underutilized in South-East Nigeria. An experimental study in Ekiti State revealed that multimedia and simulation-enhanced agricultural instruction significantly improved student academic performance and interest in the subject yet no comparable program is known to exist within South-East schools. This disparity reflects broader structural inequalities in

resource allocation and innovation adoption across states, and in turn underscores a significant missed opportunity. digital tools could provide scalable, low-cost solutions to material constraints in school poultry training.

The policy environment offers both promise and complexity. In October 2024, the Federal Government unveiled plans to introduce 15 skill acquisition areas, including agriculture and poultry farming, into the curriculum from 2025 (Federal Government announcement, 2024). While this initiative signals a shift toward skill-based education, implementation details remain vague, and to date no data exists to show readiness in teacher capacity, infrastructure, or monitoring mechanisms in South-East secondary schools.

Equally concerning is the broader socio-cultural valuation of agricultural education. Students often view Agriculture as a lower-status discipline, exacerbated by perceptions of school farms as punitive or dreary. This attitudinal barrier further reduces student engagement, diminishes motivation to acquire practical skills, and undermines the potential for poultry instruction to become a catalyst for agripreneurial orientation.

This research establishes the urgent need for research to assess and enhance practical skill readiness for sustainable poultry production in senior secondary schools in South-East Nigeria. By deploying mixed methods including school infrastructure audits, teacher competency assessments, student practical performance evaluations, and policy implementation analysis this study aims to map the existing landscape, identify barriers, and propose actionable strategies to strengthen the capability of schools to deliver sustainability-oriented poultry education. Its findings will support curriculum designers (NERDC), teacher training institutions, state ministries of education, and agricultural policy implementers in shaping interventions that connect classroom theory to field-based competence, and support youth to become agents of change within the poultry value chain.

Hence, this study examines the practical skill needs for sustainable poultry production among senior secondary school students, with the aim of informing policy, curriculum reforms, and teacher training strategies.

STATEMENT OF THE PROBLEM

The teaching of poultry production in Nigerian secondary schools has historically emphasized cognitive knowledge at the expense of functional, psychomotor, and entrepreneurial skills. A 2021 audit by the Nigerian Educational Research and Development Council (NERDC) revealed that over 65% of secondary schools in South East Nigeria lack operational poultry units, practical manuals, or simulation tools for skill acquisition in poultry production (NERDC, 2021).

Lack of Empirical Data on Skills Acquisition and Student Engagement Existing research from Kaduna and other regions suggests participation in school poultry farms influences student attitudes and career choices but such data is missing for South East Nigeria, leaving a critical gap in understanding local student engagement and skill translation.

Policy implementation disconnect. Nigeria's 2025 curriculum reforms include poultry-based skills training as one of the 15 skill areas. However, there is little empirical evidence of implementation readiness in South East schools no documented teacher training modules, infrastructure preparedness, or institutional planning.

Socio-Cultural and Systemic Barriers Cultural undervaluing of agricultural education, coupled with resistance to practical curriculum changes and inadequate funding for farm-to-classroom programs, limits meaningful skill acquisition for students.

Furthermore, Agricultural Science teachers are often not adequately trained in modern poultry technologies, such as battery cage systems, vaccination schedules, hatchery management, and feed conversion optimization (Olaitan and Nwachukwu, 2018). This shortfall directly impedes the transmission of sustainability-based competencies to students.

Despite scattered efforts, such as the National School Agricultural Program (NSAP) and pilot poultry schemes in states like Anambra and Enugu, these interventions remain underfunded, uncoordinated, and non-replicable across school systems. There is little empirical data on the specific skill gaps, competency needs of teachers, and structural deficits preventing effective poultry training at the SSS level.

PURPOSE OF THE STUDY

The purpose of this study is to identify the effective planning and breeding skill needs required for sustainable poultry production in senior secondary schools in South East Nigeria.

The specific objectives are to:

1. Assess the planning skills on poultry production in senior secondary schools.
2. Determine the breeding management skills on poultry production in senior secondary schools.

RESEARCH QUESTIONS

1. What are the planning skills on poultry production in senior secondary schools?
2. What are the breeding management skills on poultry production in senior secondary schools?

HYPOTHESES OF THE STUDY

The following null hypotheses will be tested at 0.05 level of significance.

1. **H₀₁**: There is no significant difference between the mean rating scores of teachers' and poultry farmers on the planning skills in poultry production.
2. **H₀₂**: There is no significant difference between the mean rating scores of teachers' and poultry farmers on the breeding management skills in poultry production.

METHOD OF DATA ANALYSIS

Data for the study was analyzed using a combination of descriptive and inferential statistical techniques, in alignment with the research objectives, questions, and hypotheses. Descriptive statistics such as mean, standard deviation, and frequency percentages was employed to summarize responses regarding the level of competency required for sustainable poultry production in senior secondary schools. These statistics offered a detailed overview of central tendencies and variability in the opinions of the two primary respondent groups agricultural science teachers and poultry farmers.

To test the null hypotheses, inferential statistics was applied. Specifically, the Independent Samples t-test was used to compare the mean ratings of teachers and poultry farmers on specific poultry production competencies.

RESULTS

Research Question 1

What are the planning skills on poultry production in senior secondary schools?

Table 1: Mean and Standard deviation rating scores of planning skills on poultry production

S/N	Planning skills	$\bar{x}$	SD	Remark
1	Ability to define goals and business plan (example do you want to raise birds for eggs or meat or both to determine the type of birds to put into consideration and budget for.	4.83	0.83	VHN
2	Ability to prepare a feasibility study on poultry production	4.26	0.65	HN
3	Ability to provide adequate housing for birds	4.17	0.80	HN
4	Ability to provide feed for birds	3.99	1.19	HN
5	Ability to plan for unexpected outcomes or miscellaneous	4.65	0.65	VHN
6	Ability to hirer laborers for a large scale poultry farm	4.30	0.73	HN
7	Ability to provide finance for executing the poultry farm	4.46	1.32	VHN
Pooled $\bar{x}$		4.38		

Data in Table 1 showed that items 1,5 and 7 were rated very highly needed (VHN). These items are ability to define goals and business plan, ability to provide finance for executing the poultry farm.

On the other hand, Data in table 1 indicated that items 2, 3, 4, and 6 were rated highly needed. These items are ability to prepare a feasibility study on poultry production, ability to provide adequate housing for the birds, ability to provide feeds for birds and ability to hire laborer's for a large scale farming. In general, the need for planning skills in poultry production in senior secondary schools is rated highly needed.

Hypothesis 1

There is no significant difference between the mean rating scores of teachers and poultry farmers on the planning skills in poultry production.

Table 2: t-test analysis of mean rating scores of teachers and poultry farmers on the planning skills in poultry production.

Respondents	N	$\bar{x}$	SD	t	P value
Teachers	54	4.63	0.23	9.392	0.047
Poultry farmers	52	4.12	0.23	0.32	

Data in Table 2 revealed a t calculated value of 9.392 with a P value of 0.047 ($P < 0.05$) which is less than 0.05 at 0.05 level of significance set for the study. This implies that the null hypothesis which states that there is no significant difference between the mean rating scores of teachers and poultry farmers on the planning skills in poultry production is rejected. Therefore, there is a significant difference between the mean rating scores of teachers and poultry farmers on the planning skills in poultry production is rejected. Therefore, there is a significant difference between the mean rating scores of teachers and poultry farmers on the planning skills in poultry production. That is, the mean rating scores of the farmers and teachers significantly differ on the planning skills in poultry production.

Research Question 2

What are the breeding management skills on poultry production in senior secondary schools?

Table 3: Mean and Standard deviation rating scores of teachers and farmers on the breeding management skills needed in poultry production.

S/N	Breeding skills	$\bar{x}$	SD	Remark
8	Ability to source high quality breeding stake based on production goals	4.76	0.54	VHN
9	Ability to select suitable birds for breeding	4.46	0.69	VHN
10	Ability to monitor breeding	4.13	1.00	HN
11	Ability to know gestation period	3.98	1.07	HN
12	Ability to identifying birds on heat	4.13	1.35	HN
13	Ability to carry out artificial insemination	4.31	0.54	HN
14	Ability to provide vaccines that provide breeding	3.92	1.08	HN
	Pooled $\bar{x}$	4.30		

Data in Table 3 revealed that items 8 and 9 were rated very highly needed (VHN). These are the ability to source high quality breeding stock and ability to select suitable birds for breeding.

On the other hand, Data in Table 3 indicated that items 10, 11, 12, 13 and 14 were rated highly needed. These items are, ability to monitor breeding, ability to know gestation period, ability to identify birds on heat, ability to carry out artificial insemination and ability to provide vaccines that promote breeding. In general, the breeding management skills in poultry production in senior secondary schools is rated highly needed.

Hypothesis 2

There is no significant difference between the mean rating scores of teachers and poultry farmers on the breeding management skills needed in poultry production.

Table 4: t-test analysis of mean rating scores of teachers and poultry farmers on the breeding management skills.

Respondents	N	$\bar{x}$	SD	t	P value
Teachers	54	4.62	0.24	12.965	0.011
Poultry farmers	62	3.97	0.28	0.32	

Data in Table 4 revealed a t calculated value of 12.965 with a P value of 0.011 ($P < 0.05$) which is less than 0.05 at 0.05 level of significance set for the study. This implies that the null hypothesis which states that there is no significant difference between the mean rating scores of teachers and poultry famers on the breeding management skills is rejected, therefore, there is a significant difference between the mean rating scores of teachers and poultry famers on the breeding management skills needed for poultry production in senior secondary schools.

Discussion of Findings

The findings of the study were discussed based on the following:
 Planning skills needs required in Poultry Production, the present study found that the planning skill needs required in poultry production in senior secondary school includes the ability to; define goals and business plan, plan for unexpected outcomes or miscellaneous, provide finance for executing the poultry farm, prepared a feasibility study on poultry production and provide adequate housing among others. In other words, for the senior secondary school students to possess these skills or have the ability to plan the establishment of poultry, farms especially after graduation, they must possess these skills. It implies that the planning skills must be included in their curriculum as suggested by the possessing the planning skills in order to thrive in poultry, production.

The findings of the present study agreed with Alliyu and Adamu (2022) who noted that poor planning, particularly in feed budgeting and production scheduling, might be undermining sustainability. They went further to find that only 45% of farmers planned feed sourcing in advance, while just 30% estimated production cycles before restocking flocks. According to them, planning skills were shown to have significant positive association with flock survival rates. The study concluded that inadequate planning weakens production efficiency and increases mortality. The recommended intensive training in feed budgeting, input for casting, and production cycle scheduling.

The findings of the present study also agreed with Olawale and Ibrahim (2020) whose result indicated that 62% of farmers did not prepare detailed feed budgets, while 58% lacked skills in forecasting poultry house requirements. Only 40% engaged in financial projections before stocking birds. The overall mean rating was 2.34 (on a 5-point scale), while was classified as unsatisfactory for planning skills. Chi-square results revealed a significant relationship

($\chi^2 = 14.2, P < 0.05$) between planning skills and farm profitability.

The above evidences justify the need for the planning skills to be possessed by the students at the end of their training in senior secondary school especially among those that will go into practical poultry farming at the end of their training.

The result of the present study indicated that the breeding management skills needed in poultry production in very high extent included ability to source high quality breeding stock and ability to select suitable birds for breeding. Those needed in high extent included ability to monitor breeding, ability to know gestation period, ability to identify birds on heat, ability to carry out artificial insemination and ability to provide vaccines that promote breeding. In other words, the teachers and farmers agreed that these are breeding management skills that the senior secondary school students should master or possess to enable them perform well in poultry production. For teachers to implement or teach the students these breeding skills, it is important they are included in the curriculum and method of teaching.

CONCLUSION

The study examined the practical skill needs for sustainable poultry production in senior secondary schools in South-East, Nigeria. Based on the findings of the study, the researcher concluded that for senior secondary school students to be effective in practical agricultural skills especially in poultry production, they need or should possess planning skills, breeding skills, nutrition skills, hygiene and health management skills, record keeping and farm management skills, slaughtering and processing skills, packaging and marketing skills, to at least a very high extent. These can be achieved or accomplished through its incorporation with the national curriculum board for vocational education for skill acquisition in poultry production among others.

RECOMMENDATIONS

Based on the findings and conclusion of the study, the following recommendations were made:

1. All the skills identified in planning skills and breeding management skills should be integrated in the revised curriculum of agricultural science for use.
2. The National Examination Council (NECO) and West African Examination Council (WEAC) should incorporate these skills in their syllabus especially in subject area of animal husbandry.
3. The agricultural science teachers should adopt these skills when teaching practical agriculture especially in the area of poultry production.
4. Schools should collaborate with the National Board for Vocational Education for skill acquisition in poultry production and other relevant boards and agencies.
5. Schools should encourage in-service training for agricultural science teachers to equip them with updated poultry production skills.

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