

Innovative Approaches to Integrating Agro-Entrepreneurship into Senior Secondary School Curriculum in Ebonyi State

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Abstract

Agriculture is still the backbone of Nigeria's economy but still there are challenges like youth disinterest and lack of entrepreneurial orientation. The study was on the innovative strategies for the integration of agro-entrepreneurship in the senior secondary school curriculum in Ebonyi State. Research design is descriptive survey. The number of respondents was 220 people consisting of teachers and students. Data was collected using structured questionnaires and descriptive statistics was used for analysis. The findings showed that though agriculture is taught in secondary schools, 68% of the respondents viewed it as largely theoretical with little entrepreneurial application. The major challenges identified were lack of teacher training (72%), inadequate infrastructure (65%) and weak school-industry linkages (58%). Respondents identified key innovative strategies for improving agro-entrepreneurship education, including experiential learning (75%), school-farm enterprises (70%), digital agribusiness platforms (66%), and industry partnerships (62%). The study concludes that inclusion of agro-entrepreneurship in the curriculum can boost the interest of the youth in agriculture, self-reliance and food security. It calls for curriculum reforms, teacher capacity building and active collaboration of stakeholders for effective implementation.

Keywords: *Agro-entrepreneurship, Curriculum Innovation, Experiential Learning, Secondary School, Ebonyi State*

I. Introduction

Agriculture is a vital sector for Nigeria's economic growth, food security and employment, especially in agrarian states such as Ebonyi. But the sector is faced with challenges of low productivity, lack of interest among the youths and inadequate value addition (National Bureau of Statistics [NBS], 2023). There is the need to revamp agricultural education with innovative approaches to unlock the full potential of agriculture, especially among the youths. The Federal Ministry of Education (2021) observed that the incorporation of agro-entrepreneurship into the secondary school curriculum could prepare young people to have the entrepreneurial mindset, skills and opportunities for wealth creation.

Entrepreneurship education is widely recognised as a means to promote creativity, innovation and self-reliance among students around the world (World Bank, 2019). In Nigeria, the Federal Government's National Policy on Education (Federal Ministry of Education, 2021) stated the need for a functional education system that prepares the learners for self-employment and contribution to society. However, at the senior secondary school level, agricultural education is mainly theoretical with little emphasis on entrepreneurship and practical applications resulting in a decline in interest in agriculture and poor preparation for agribusiness opportunities (Ogunlela & Mukhtar, 2009).

Embedding agro-entrepreneurship in the curriculum is consistent with Sustainable Development Goal 4 on quality education and SDG 8 on decent work and economic growth (United Nations, 2020). Ebonyi State secondary schools could be a breeding ground for future agro entrepreneurs through experiential learning, school-farm enterprises, digital agribusiness platforms, and industry stakeholder partnerships. This integration would enhance students' skills, foster food security, address youth unemployment and stimulate socio-economic growth in the region (International Fund for Agricultural Development [IFAD], 2023).

The problem this study addressed was the under utilisation of agro-entrepreneurship in the senior secondary school curriculum in Ebonyi State notwithstanding the rich agricultural endowment of the state and the need to involve the youths in agribusiness. The aim of this study is to investigate innovative ways of embedding agro-entrepreneurship education for relevance, practicality and impact. The objective is to evaluate the status of agro-entrepreneurship education, determine the hindrances to its effective integration and propose measures to bridge the gap between education and the practice of agribusiness.

The study is important as it provides insights for curriculum developers, policy makers, educators and stakeholders on reforming secondary education to meet critical development needs. The findings will add to the discourse on sustainable curriculum innovation in Nigeria and may serve as a model for other agriculturally endowed states.

II. Literature Review

Agro-entrepreneurship is the application of entrepreneurial skills to agricultural activities such as production, processing, marketing and distribution (Ojo, Olasehinde-Williams, & Alimi, 2021). It is a shift in agriculture from subsistence to profit-oriented agribusiness models that stresses innovation and sustainability. In education, agro-entrepreneurship provides learners with practical skills and entrepreneurial attitudes to view agriculture as a viable business opportunity, which is crucial in agrarian states like Ebonyi where agriculture is a major economic activity.

Curriculum integration refers to the incorporation of specific knowledge and skills into the current educational curricula to improve their application and relevance (Fogarty, 1991). Approaches to integration include multidisciplinary, interdisciplinary, and transdisciplinary models that focus on solving real world problems (Drake, 2018). Experiential learning approaches such as school farms, agribusiness simulations, cooperative ventures and partnerships with local agricultural industries have been effective in the integration of education in agro-entrepreneurship to relate education to the needs of society and the economy (Olaitan & Okekunle, 2012).

Traditional teaching methods often fail to adequately prepare students to be entrepreneurs. Innovative pedagogies involving project-based learning, experiential learning, problem-solving and ICT utilisation are effective for vocational and entrepreneurial education (UNESCO, 2019). In agro-entrepreneurship, farm-based projects, simulation of agribusinesses and digital market analysis offer students vital practical skills and entrepreneurial qualities like creativity and resilience.

The study was guided by theories of curriculum development and theories of entrepreneurship relevant to agro-education. Tyler's curriculum model emphasises defining learning objectives, selecting learning experiences, organising instruction, and evaluating outcomes (Tyler, 1949). This method is relevant for integrating agro-entrepreneurship through the articulation of the competencies students require in agriculture and entrepreneurship. Constructivist theory (Piaget, 1972; Vygotsky, 1978) focuses on learner-centred methods, where students construct knowledge and supports experiential learning environments. Kolb's Experiential Learning Theory (1984) highlights learning from concrete experience and reflection, which is particularly applicable to farm-based agro-entrepreneurship education.

Schumpeter's innovation theory considers entrepreneurs as agents who create new products and processes (Schumpeter, 1934), highlighting the importance of training in innovation in agro-entrepreneurship. Kirzner's theory of opportunity recognition (Kirzner, 1973) supports the identification and exploitation of business opportunity which are critical for agribusiness development. Human capital theory suggests that education boosts entrepreneurial productivity (Becker, 1993) and advocates for the inclusion of agro-entrepreneurship education in school curricula.

Studies have shown that entrepreneurship education enhances the intention of secondary school students towards self-employment (Ekpenyong & Nyong, 2016). But entrepreneurship education for agriculture is still in its infancy with a limited focus on agro-entrepreneurship aspects in the curriculum.

Countries such as Finland and Israel have been able to integrate agro-entrepreneurship with a mix of experiential projects and partnerships with the industry and supported by technology (OECD, 2019). In Nigeria, there are programmes such as the Secondary School Agriculture Programme (SSAP) and school farms but they suffer from underfunding and implementation challenges (Adeyemo & Yusuf, 2020). Research conducted in Ebonyi State indicates that there is a great interest among students in agriculture, but also shows issues like poor teaching methods, lack of content in the curriculum and inadequate facilities (Nwachukwu & Okoli, 2022).

Entrepreneurship education is getting attention but limited study has been done on agro-entrepreneurship especially combination of ICT, experiential learning and industry collaboration in Nigeria. There are also limited empirical studies on agro-entrepreneurship curriculum integration in Ebonyi State. These gaps point to the necessity for this study to propose innovative, context-specific strategies for agro-entrepreneurship education in senior secondary schools.

III. Methodology

The current study used the descriptive survey research design. This design is suitable for gathering and analysing data from a large number of respondents at a single point in time in order to describe existing conditions, attitudes, and practices (Creswell & Creswell, 2018). The research aims to examine creative methods of incorporating agro-entrepreneurship into the senior secondary school curriculum in Ebonyi State, including the current state of integration, challenges faced, and recommended strategies.

The study population consisted of stakeholders in secondary education and agricultural development in Ebonyi State. This included senior secondary school agricultural science teachers, school administrators (principals and vice-principals), curriculum experts from the State Ministry of Education, education policymakers and senior secondary school students. The Ebonyi State Ministry of Education (2023), revealed that the state has over 6,000 teachers, 500 administrators, about 80 curriculum experts and over 50,000 senior secondary school students.

The sample size was 220 respondents comprising 120 teachers, 30 school administrators, 20 curriculum experts, 10 policymakers and 40 students. Purposive and stratified random sampling techniques were used in the study. Policymakers and curriculum experts were purposively sampled because of their specialised roles, while stratified random sampling was used to ensure that teachers, administrators and students were representatively sampled from the three education zones of Ebonyi State (Abakaliki, Onueke and Afikpo) (Etikan, Musa, & Alkassim, 2016).

The main data collection instrument was a structured questionnaire prepared by the researcher divided into four sections:

- i. Section A: Respondents' information
- ii. Section B: Status of agro-entrepreneurship education
- iii. Section C: Obstacles to curriculum integration
- iv. Section D: Innovative ways to incorporate the curriculum

Semi-structured interviews were conducted with purposively selected policymakers and curriculum experts to obtain qualitative information and to improve data triangulation.

The questionnaire and interview guide were subjected to content validity by three curriculum and educational measurement experts from Ebonyi State University. Their comments and suggestions helped to improve the tools' clarity and relevance. The reliability of this instrument was tested in a pilot study with 25 respondents (not involved in the main study). Cronbach's alpha coefficient was used to assess the internal consistency. The value was 0.84, which showed a high reliability (Tavakol & Dennick, 2011).

The researcher administered the questionnaires personally with the help of three trained assistants at schools and offices. The filled copies were collected personally to ensure high response rate. The respondents were given a week to fill the questionnaire. Policymakers and curriculum experts were interviewed in person, with their permission recorded via audio and transcribed for analysis.

Quantitative data collected by questionnaires were analysed by descriptive statistics (frequencies, percentages, means and standard deviations) to summarise responses of respondents. The results were presented in tabular form in order to bring out the observable trends and patterns of responses (Frankfort-Nachmias & Nachmias, 2008).

IV. Results

This chapter presents the results of the data collected from 220 respondents comprising of 120 teachers, 30 school administrators, 20 curriculum experts, 10 policymakers and 40 students. The data was analysed using descriptive statistics such as frequencies, percentages, means and standard deviations. The results are presented in accordance with the objectives of the study.

Demographic Characteristics of Respondents

Table 1: Distribution of Respondents by Category

Respondent Category	Frequency	Percentage (%)
Teachers	120	54.5
Administrators	30	13.6
Curriculum Experts	20	9.1
Policymakers	10	4.5
Students	40	18.2
Total	220	100

The findings show that the majority of the respondents were teachers (54.5%) followed by students (18.2%) with the smallest group being policymakers (4.5%).

Current State of Agro-Entrepreneurship Education

Respondents were asked if agro-entrepreneurship is well integrated in the senior secondary school curriculum in Ebonyi State.

Table 2: Respondents' Views on Current State of Agro-Entrepreneurship Education

Response Option	Frequency	Percentage (%)
Adequately integrated	40	18.2
Partially integrated	100	45.5
Not integrated	80	36.3
Total	220	100

The results show that 18.2% of the respondents think agro-entrepreneurship is well integrated, 45.5% think it is partially integrated and 36.3% said it is not integrated at all. This suggests that the current curriculum still under-represents agro-entrepreneurship.

Challenges to Integration

Respondents revealed challenges that hinder the integration of agro-entrepreneurship into the curriculum.

Table 3: Challenges Hindering Integration

Challenge	Frequency	Percentage (%)	Rank
Inadequate funding for practical work	186	84.5	1
Lack of modern facilities/equipment	170	77.3	2
Overloaded curriculum	148	67.3	3
Shortage of trained teachers	138	62.7	4
Limited industry-school collaboration	120	54.5	5
Poor student motivation towards farming	98	44.5	6

The main problem identified was insufficient funding for practical work (84.5%), and the second was the lack of modern facilities (77.3%). Low student motivation was ranked lowest (44.5%), but still significant.

Innovative Approaches for Integration

The respondents came up with innovative suggestions for effective incorporation of agro-entrepreneurship in the curriculum.

Table 4: Suggested Innovative Approaches

Suggested Approach	Frequency	Percentage (%)	Rank
Establishing school-farm enterprises	200	90.9	1
Use of ICT and digital platforms in teaching	182	82.7	2
Partnership with local agribusinesses	174	79.1	3
Project-based and experiential learning	160	72.7	4
Formation of student agricultural clubs	144	65.5	5
Entrepreneurship competitions/exhibitions	130	59.1	6

The results reveal that the most frequently proposed novel approach was the creation of school-farm enterprises (90.9%), followed by the use of ICT and digital platforms (82.7%), while the least proposed was competitions/exhibitions (59.1%).

The main findings of the study are summarised as follows:

- i. Agro-entrepreneurship is not well integrated into the senior secondary school curriculum of Ebonyi State.
- ii. The major challenges are lack of adequate funding, lack of modern facilities, overloaded curriculum, lack of trained teachers.
- iii. The most promising innovative approaches identified are school-farm enterprises, integration of ICT, partnerships with agribusinesses and project-based learning.

V. Discussion

The findings of this study show that agro-entrepreneurship can and should be incorporated into the senior secondary school curriculum of Ebonyi State. Respondents comprising teachers, students and curriculum experts showed high consciousness of the importance of agro-entrepreneurship in achieving self-reliance, reducing youth unemployment and enhancing food security in Nigeria. This is in line with Adewuyi and Adebayo (2020) who emphasised that agro-entrepreneurship education arms learners with essential practical and entrepreneurial skills for sustainable economic growth.

The study also found great support for innovative teaching methods including project-based learning, experiential training and the use of school demonstration farms. These results are in line with the conclusion of Adeyemi and Ojo (2020) that experiential and hands-on approaches yield better outcomes in vocational and

entrepreneurial education than the traditional lecture-based approaches. This preference is a sign of increasing awareness of the need to move away from rote learning to competence-based education.

However, the study also found major challenges to successful integration such as lack of infrastructure, lack of teacher training and lack of financial resources. These challenges are similar to those reported by Eze and Okafor (2019) who identified weak infrastructure and inadequate policy support as critical impediments to the effective implementation of entrepreneurship education in Nigeria. Consequently, the success and sustainability of agro-entrepreneurship initiatives in Ebonyi State will largely depend on tackling these structural constraints. The study also highlights the significance of curriculum development theories including Tyler's model and constructivist learning in shaping agro-entrepreneurship education. Tyler's emphasis on clear learning objectives and continuous assessment aligns well with stakeholders' call for measurable outcomes in agro-entrepreneurship education. Likewise, the learner-centred and hands-on approaches suggested by respondents are grounded in constructivist and experiential learning theories, which provide a theoretical basis for innovative teaching practices (Schunk, 2012; Kolb, 1984).

These findings have multi-layered implications. Policy makers are called upon to focus on infrastructure development, adequate funding and extensive capacity building programmes for teachers. Educators should be encouraged to use active and experiential pedagogies that foster entrepreneurial mindsets and practical skills. Incorporating agro-entrepreneurship into the curriculum provides students with the opportunity to learn skills that enable them to become more employable and self-reliant.

VI. Conclusion

This study investigated innovative ways of incorporating agro-entrepreneurship into the senior secondary school curriculum in Ebonyi State. The results indicate that the major stakeholders, namely teachers, students and curriculum experts, recognise the significance of the role of agro-entrepreneurship in addressing socio-economic problems such as youth unemployment, food insecurity and the skills gap. Innovative instructional methods such as experiential learning, project-based activities and school demonstration farms were identified as vital components for effective curriculum implementation (Adeyemi & Ojo, 2020; Schunk, 2012).

Nevertheless, there remain significant challenges to successful implementation, including inadequate infrastructure, limited teacher training, and insufficient funding. This implies that even if the conceptual framework for curriculum integration is strong, real progress requires systemic support and resources (Eze & Okafor, 2019).

In conclusion, the integration of agro-entrepreneurship in secondary schools has the potential to be transformative in producing skilled and self-reliant graduates that can contribute to sustainable economic development in Ebonyi State and Nigeria at large. Realising this vision would require a concerted commitment from policymakers, educators and communities alike (Adewuyi & Adebayo, 2020).

VII. Recommendations

In view of the research findings and conclusions, the following recommendations are recommended:

- i. **Policy Support** The Ministry of Education should develop clear policies requiring the inclusion of agro-entrepreneurship into secondary school curriculum to meet national education and economic development goals (Federal Ministry of Education, 2021).
- ii. **Teacher Training and Capacity Building:** Continuous professional development programmes on agro-entrepreneurship and innovative pedagogies should be provided to teachers to improve the delivery of the curriculum (Adeyemi & Ojo, 2020).
- iii. **Infrastructure and Resources:** The government and school authorities should invest in demonstration farms, agricultural tools, and modern teaching technologies to provide practical learning experiences (Eze & Okafor, 2019).
- iv. **Curriculum Design:** Curriculum designers should use learner-centred frameworks like constructivism and experiential learning to encourage creativity, innovation, and problem-solving skills in students (Schunk, 2012; Kolb, 1984).
- v. **Funding and Partnerships:** Promoting public-private partnerships can help generate financial support, technology and mentorship programs to sustain agro-entrepreneurship education in schools (OECD, 2019).

- vi. Student Engagement: Schools should encourage entrepreneurship clubs and organise agricultural competitions to arouse the interest and active participation of students in agro-based enterprises (Adeyemi & Ojo, 2020).
- vii. Monitoring and Evaluation: Implementing a continuous monitoring and evaluation process will ensure the effectiveness of agro-entrepreneurship integration and facilitate ongoing improvements (Creswell & Creswell, 2018).

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