



# **Towards Developing a Blueprint for Effective Vocational Agricultural Education Delivery in Nigeria Secondary Schools**

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## **ABSTRACT**

The fall in the price of crude-oil in the international market which affect adversely the economy of Nigeria makes the government of Nigeria to agitate for diversification from crude-oil based economy to agriculture. And how can agriculture becomes a solution and revitalize the economy where the graduates and the youths who have the technical know-how and the strength seek for white collar jobs alone due to their wrong attitude to agriculture. To ensure the actualization of this, there is the need for orientation, re-orientation and enlightenment to change the mind-set of the populace to embrace agriculture and to revitalize the source of the technical know how and skills which is vocational agricultural education. By revitalization, vocational agricultural education will be sustained. Sustainability of vocational agriculture required capacity building and development of vocational agricultural education teachers and the entire vocational agriculture sector and institutions. And this can be achieved through development of a blue-print that will enhance effective delivery of vocational agricultural education skills. The article examine towards developing a blue print for effective vocational agricultural education delivery in Nigeria secondary schools. The paper recommended that vocational agricultural education institutions and training centers should be well equipped with the modern teaching and training facilities that will enhance series of practicals to ensure proper inculcation of the needed skills in vocational agricultural education. Vocational agriculture be made a compulsory subject in both primary and secondary levels of education. Also demonstration or practical farms be made compulsory in all secondary schools in order to enhance the acquisition of the required skills in vocational agriculture as well as government should train, retrain, organize workshops and seminars to equip the vocational agricultural education teachers for the task of teaching and keep them abreast of the current trend in vocational education.

**Keywords:** Blueprint, Vocational Agriculture Education, Secondary Schools, Development, and Delivery.

## **INTRODUCTION**

Nigeria as a developing nation, continues to grapple with the challenges of national development (Idris, 2017). These challenges include bringing about a steady economic growth made possible by improvements in key strategic areas of national life, such as food security, affordable housing, employment opportunities, comprehensive healthcare delivery and of course universal education

opportunities. The dynamics of globalization plus the introduction of information and communication Technology (I.C.T) have resulted in a tidal wave of information that has in many cases, overwhelmed many countries around the world. This has resulted in radical changes in the educational needs of individuals and society at large, a phenomenon that is reflected in the emerging needs for additional specialization in learning. By this, more educational institutions are required to impact their students with functional lifelong skills they need to survive and meet the challenges and changes brought by the twenty-first century.

In other words, the evolution of education from the traditional school-based brick-and-mortar type to the current systems based on information and communication technologies and distance learning, dictates that the vocational agricultural education sector should also adapt its processes in the expansion of opportunities to these forms of education. This adaptation to newer models of providing educational access is sometimes necessitated by lack of adequate facilities to meet up with the demands of a rising population by government and at other times, it is a reflection of a peculiar social condition in which potential beneficiaries of educational opportunities are themselves not ready or willing to pursue full-time studies due to their economic or family commitments. It is therefore in appreciation of these factors that most governments have continued to explore the alternative platform of open and distance learning (ODL) as a complement to the goals of providing opportunities for education to the citizenry at all levels (Idris, 2017).

### **Concept of Blue-Print for Vocational Agricultural Education**

A blueprint is a layout or road map, detailed or schematic plan of how to set about a particular project. It maps out the goals or targets of an organization with regards to what the organization intends to achieve and how such goals or targets can be achieved. Kelly (2009) asserted that attempts to develop a blue-print for effective Vocational Agriculture in Nigeria brought together all stakeholders in agriculture to help share its future direction. Almost 4000 farmers, transporters, retailers, consultants, educators, governments of rural communities, community groups and consumers involved in agribusinesses took part in the development of the Blue-Print (Kelly, 2009).

Vocational Agricultural Educators selected four key goals that they wish to see action on today in order to ensure the success of the vocational agricultural sector of tomorrow. They were;

- **Innovation, Research, Development and Extension:** This involved securing investment in, and developing models to underpin, research, development and extension in Nigeria agriculture.
- **Competitiveness:** This had to do with building the sector's competitiveness and profitability through understanding our market opportunities and value chains to create growth, market access and future opportunities.
- **Agriculture within Society:** This involved telling the story of agriculture by building a common narrative about the sector in order to better position agriculture in the minds of Nigerian prospective agricultural employees and international markets.
- **Natural Resources:** This was concerned with embedding sustainability as core business across agriculture and its supply chain.

### **Implementing the Blue-Print for Vocational Agricultural Education**

In order to achieve the four Blueprint goals, the country was expected to be committed to the following actions:

- **For Innovation Research, Development and Extension:** Frantic moves should be made to determine the appropriate funding requirements and models to underpin contributions from both the private and public sector via a vibrant public-private partnership roundtable.
- **For Competitiveness:** There should be a development of a cost and needs analysis to better understand market opportunities, competitors and value chains.
- **Under Agriculture within Society:** Efforts should be made to develop and implement a communication plan to better tell the story of agriculture through a hands-on instructional delivery among in-school youths, out-school youths and adult practicing farmers. In the case

of Natural Resources there should be a development of shared understanding of sustainability via a roundtable as one of the steps in embedding the core business of agriculture (Kelly, 2009).

Blueprint is an ambitious plan into many goals for agriculture and wider sector. Implementing the vocational agricultural education delivery blueprint is a long-term process that requires the involvement of the key players in the educational and agricultural sector and its supply chain.

Agriculture as defined by Rimando (2004) is described as a systematic raising of useful plants and livestock under the management of man, while Rubenstein (2003) defined it as the deliberate effort to modify a portion of Earth surface through the growing of crops and the raising of livestock for sustenance or economic gain. This means that agriculture is an art and science, especially as it require skills and is founded on scientifically verified facts and this includes specialized disciplines. The words “growing” and “raising” are descriptive enterprise activity or practice. It has two main divisions; plant and crop production and animal or livestock production, and its ultimate purpose is for food production, other human needs such as clothing, medicines, tools artistic display and dwelling, or for economic gain.

Agricultural science is one of the core vocational curricular subjects taught at both Junior and Senior Secondary Schools in Nigeria. Egbule (2004), defines it as a means of training learners in the process of agricultural productivity as well as the techniques for teaching of agriculture. It is a subject taught in secondary schools for self-reliance and preparation for further studies. Agricultural science is therefore designed for inculcation of the necessary skills for the practice of agriculture for effective citizenship and contribution to food security and national sustainability. That is why Federal Republic of Nigeria (FRN) (1994) outlines the seven major objectives of teaching and learning of agricultural science to include:

1. ability to stimulate student’s interest in agriculture
2. ability to enable students acquire basic knowledge in agriculture
3. ability to develop basic agricultural skills in students
4. ability to integrate students knowledge with skills in agriculture.
5. ability to expose students to opportunities in the field of agriculture
6. ability to prepare students for further studies in agriculture
7. ability to prepare students for occupations in agriculture.

Attainment of the above objectives however depends on agricultural science teachers and their pedagogical approaches. Agricultural science teachers are trained and groomed from teacher preparation institutions for the purpose of enhancing quality impartation of agricultural skills, knowledge, attitudes and values to students for self-reliance, promotion of agriculture and food security in their future lives. It is therefore the duty of this group of teachers to:

- stimulate and sustain student’s interest in agriculture.
- enable students acquire basic knowledge and practical skills in agriculture.
- enable students integrate knowledge with skills in agriculture
- prepare and expose students to occupations in agriculture and agro allied businesses .

### **Effective Delivery of Vocational Agriculture Instructions**

According to Ikeoji-Agwubike and Disi (2007) instructional delivery of vocational agriculture at the senior secondary level should not be handled as per science, but as a vocational subject for acquisition of practical agricultural skills for meaningful living.

The authors maintained that the basic goal of our National policy on education is to make education both functional and utilitarian. Ikeoji (1998) reported that vocational education is borne out of the need for the system to make its products useful to themselves. Furthermore, Ikeoji, Agwubike and Disi, (2007) stated that the objectives of agricultural education at the senior secondary should include:

- to stimulate and sustain student interest in agriculture.
- to enable students acquire useful knowledge and practice skills in agriculture.
- to prepare students for further studies in agriculture

In addition to this, Ikeoji, Agwubike & Disi (2007) outlined the aim of vocational education in Nigeria as follows:

- (i) to provide people who can apply scientific knowledge for the improvement of lives and mitigation of environmental problems for use and convenience of humanity.
- (ii) to provide technical knowledge and vocational skills necessary for agricultural, industrial, commercial and economic development.
- (iii) to provide young men and women with an intelligent understanding of the increasing complexity of technology.

It has been observed that as laudable as the objectives of vocational agriculture education in Nigeria, may be, it may be impossible to achieve them due to poor delivery process of the programme and inappropriate method of evaluating the performance of students in vocational agriculture at the senior secondary school (Ikeoji, 1998). Martin & Odlibiya (1991) reported that the primary role of vocational agriculture teacher has always been to help students to learn knowledge and skills in agriculture.

This notwithstanding, several lapses associated with the organization of vocational agriculture in secondary schools in Nigeria have been identified. They include the fact that the curriculum objectives have been found to be too broad. Other lapses include inability to identify areas that practical skills are to be developed (Obi, 2005), unspecified evaluation system (Egbule, 1998), cases of duplicated topics and poor programme delivery system (Egbule, 1998); lack of instructional aids and materials for vocational agriculture delivery, lack of means and ability to provide recommended guest lecture visit and excursions (Olaitan, and Ali, 1997). Egbule (1998) noted that the teaching / learning activities of vocational agriculture at the secondary school level are grossly inadequate to elicit the desired level of initiative and creativity in students. The work noted that the recommended instructional strategies is full of “showing”, “telling” and observing with a few cases of doing and practice, thus contradicting the recommended learning by doing and guided discovery instructional strategies as enshrined in the National Policy on Education (FRN) (2013).

#### **Teachers’ Pedagogical Approaches**

The teacher as an educator knows the right approach to effective teaching and learning. This entails teachers’ ability to:

- Move with the trend in teaching method of teacher- centered to learner-centered approach.
- Utilize adequate teaching strategies
- Plan well and write lesson notes.
- Utilize appropriate teaching aids.
- Ensure adequate use of chalkboard.

This possibly accounts for why Modebelu & Nwakpadolu (2013) emphasized that every agricultural science teacher must be effective, liberally educated, current in subject matter and its pedagogy, aware of what is expected of teachers and schools, skillful and conscientious in planning, preparing for carrying out instruction, respectful towards students and show concern about their welfare, as well as be actively involved in faculty, professional and community affairs.

#### **School Farm and Agricultural Science Instructional Delivery at the Secondary School Level**

According to Egbule (2004) practical work should form the basis for training students in agricultural science. Schools presenting candidates for agricultural science examinations must keep both livestock and crop farms. But where this is not possible, at least a well planned garden with small plots of farm crops should be maintained or at least two species of livestock from each of the following groups;

- (a) Pigs, poultry and rabbit
- (b) Cattle, goat and sheep must be kept

Keeping of both ruminant and non-ruminant animals in the school farm is very important to ensure students acquire the general skills in rearing them. The current emphasis on vocational agriculture makes it mandatory that schools and colleges should keep farms. A school farm in this context is a piece of land located within or around the school and used for cultivation of crops and rearing of animals. Essentially, school farms are geared towards helping students acquire necessary farming skills and ensuring that

classroom theories are backed up by facts and practice. Therefore, the school farm can be regarded as an educational facility (Egbule, 2004). In Nigeria, the agricultural science teacher is responsible for the day-to-day directing of the execution of the work in his school farm. Often, the services of farm hands or attendants are needed. The school farm programme should be planned and implemented in such a manner that practical activities should follow the theoretical instruction in the classroom such that, the school children are made to participate in their school farming activities as a joyful task. From the farm activities and projects they can devise a genuine sense of the dignity of labour and valuable skills through the do-it-yourself activities.

The school farm is of vital importance to any school or college with agricultural programmes. The primary purpose is to translate theory in the classroom into practice. In addition, a well organized school farm can serve the following purposes.

- To provide students with opportunity of acquiring knowledge, skills and needed competencies in agriculture.
- To provide an opportunity to demonstrate farm practices and conduct farm experiment for students.
- To provide opportunities for students to practice what they have learnt in the classroom.
- To encourage group efforts and competition among students and schools in agricultural production practices and programmes.
- To stimulate students' interest in agriculture as well as mobilize them for effective agricultural production through willful participation.
- To enable the juvenile farmers embrace modern farming early in their lives and grow up with it.
- To provide opportunities for carrying out some farming and cropping systems.
- To provide opportunities for individuals and group projects located on school farms.
- To generate funds for students and also to the school.

School farm activities are practical training skills. This is because they enable students to have the knowledge of how to perform successfully in the field of agriculture. Such activities include:

- Land preparation using the appropriate tools,
- Planting of seeds and transplanting of seedlings.
- Application of agrochemicals and fertilizer to crops using different methods
- Implementation of organic farming to ensure production of crops that are synthetic chemical free
- Weed control in crop plots by using mulching technique
- Feeding of livestock and collecting of eggs and other livestock products
- Record keeping in crop and animal production

### **Curriculum Development in Vocational Agriculture**

Kelly (2009) defined curriculum as the totality of student experiences that occur in the educational process. It is a planned sequence of instruction or a view of the student's experiences in terms of the educator's or school instructional goals.

Wiles, (2008) refer to curriculum as a set of learning goals articulated across grades that outline the intended agricultural content and process goals throughout the school programme. Curriculum may incorporate the planned interaction of learners with instructional content, materials, resources and processes for evaluating the attainment of educational objectives. Curriculum is made up of several categories including, the explicit, the implicit, the excluded and the extra-curricula (Kathy and Dale, 2003).

Curriculum may be tightly standardized or may include a high level of instructor or learner autonomy (Braslavsky, 2003). According to Wiles (2008) procedures of curriculum development should be as follows:

- Step 1: Diagnosis of needs
- Step 2: Formulation of objectives
- Step 3: Selection of content
- Step 4: Organization of content

Step 5: Selection of Learning experiences

Step 6: Organization of learning experiences

Step 7: Determination of what to evaluate and the ways and means of doing it.

Wiles (2008) further stated four ways of approaching curriculum theory and practice to include:

- (1) Curriculum as a body of knowledge to be transmitted.
- (2) Curriculum as an attempt to achieve certain ends in students – products.
- (3) Curriculum as a process
- (4) Curriculum as praxis

### **Progressivist views of Curriculum**

To a progressivist, listing of school subjects, syllabi, course of study, and list of courses of specific discipline do not make a curriculum. These can only be called curriculum if the written materials are actualized by the learner. Broadly speaking, curriculum is defined as the total learning experiences of the individual. This definition is anchored on the belief that reflective thinking is a means that unifies curricular elements, meaning that is thought is not derived from action but tested by application. According to Kelly (2009) curriculum is the sum total of all the experiences in the classroom which are planned and enacted by the teacher, and also learned by the students. By this definition therefore, if curriculum is to be practically effective and productive, it must offer much more than a statement about knowledge, content or merely the subjects which schooling is to teach or transmit or deliver.

Currently, a spiral curriculum is promoted as allowing students to revisit a subject matter content at the different levels of development of the subject matter being studied. The constructivist approach however proposes that children learn best via pro-active engagement with the educational environment, ie learning through discovery.

### **Curriculum at Primary and Secondary Education**

A curriculum may be partly or entirely determined by an external authoritative body (e.g the National Curriculum for England in English Schools). Crucial to the curriculum is the definition of the course objectives that is usually expressed as learning outcome and normally include the programme's assessment strategy. These outcome and assessments are grouped as units (or modules), and therefore the curriculum comprises a collection of such units, each in turn comprising a specialized specific part of the curriculum. So a typical curriculum includes communications, numeracy, information technology and social skills, units with specific, specialized teaching of each.

Core curricular are often instituted at the primary and secondary levels by schools board, Departments of Education, or other administrative agencies charged with overseeing education. A core curriculum is a curriculum or course of study, which is deemed central and usually made mandatory for all students of a school or school system. However, even when core requirements exist, they do not necessarily involve a requirement for students to engage in one particular class or activity.

### **Nigeria Secondary Education Curriculum**

In Nigeria, secondary school is for children from 10 years to 18 years. Secondary education is divided into two parts, the junior and senior secondary schools. The junior secondary education is pre-vocational and academic in scope. Most courses are compulsory, except religious and language courses (electives). For students to continue into senior secondary school, they have to make pass grades in their subjects with mathematics and English Language compulsory in the Junior Secondary School Certificate Examinations. In Senior Secondary School, students are allowed to choose which areas to concentrate on, be it science, arts, commerce or technical studies. All students have to sit for a Senior Secondary Certificate Examination (SSCE), of which there are three; the West African Senior School Certificate (WASCE) and the National Examination Council (NECO), National Business and Technical Examination Board (NABTEB). Students must pass either of these before being admitted into any University.

### **Vocational Agricultural Science Curriculum Implementation**

The curriculum frame approved by the Ministry of Education in December 2007 is being used as the basis for curriculum implementation in vocational agriculture through classroom instruction. Each lesson plan utilizes the following format.

- Unit
- Lesson
- Student learning objectives;
- Recommended teaching time;
- Recommended resources;
- List of equipment, tools, supplies and facilities;
- Terms;
- Interest approach

Summary of content and teaching strategies

- Objective 1;
- Objective 2;
- Presentation
- Review/summary
- Application;
- Evaluation

### **CONCLUSION**

For effective delivery, sustainable and acquisition of required skills in vocational agricultural education, there is the need for the availability of template that will act as a guide in order to avoid haphazard and non-systematic delivery of tasks or learning experience. Thus, the paper is considering towards developing a blue-print for effective vocational agricultural education delivery in Nigeria secondary schools. Education is the key to national development that is for any nation to develop priority should be given to any nation to enhance innovation, research and skills development, and that the type of education to be made available for her citizens should be practical and skill oriented. The vocational agricultural education blueprint is the surest way forward towards practical skills oriented and sustainable vocational agricultural practices.

Therefore, to achieve standard in Nigerian vocational agricultural education there is serious need for capacity development of vocational agricultural education teachers, standardized vocational agricultural education institutions and in fact over the entire vocational agricultural education sector. This would imply adequate provision of infrastructural facilities and equipment for effective and efficient demonstration of competencies in vocational agricultural education and consequently in the various institutions where agriculture is taught for this would ensure sustainable capacity development among the students.

### **RECOMMENDATIONS**

In order to ensure the actualization of sustainable vocational agricultural education, the following recommendations are proffered.

- (1) Vocational agriculture in Nigeria public schools should be well equipped with the modern teaching and training facilities to ensure proper inculcation of the right skills.
- (2) There should be series of practicals, and more time be allocated to each of these practicals to enable acquisition of the required or needed skills for each task.
- (3) Vocational agriculture should be made a compulsory subject in both primary and secondary levels of education.
- (4) Demonstration or practical farms be made compulsory in all secondary schools to enhance the acquisition of the required skills in vocational agriculture.
- (5) Government should train and retrain vocational agriculture teachers as to equip them for the task of teaching the right and appropriate skills.

(6) Government and non-governmental organizations should always organize workshop and seminar for vocational agriculture teachers to keep them abreast of the current trend in vocational education.

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