Food Security and Agricultural Education: The Quality Agricultural Teacher Preparation Imperatives

[1]Azu, Sunday Begianpuye, [2]Adie, Linus Akomaye, [1]Adie, John Betiang & [1]Ben, Camilus Bassey

[1]Agricultural Education Department, Faculty of Vocational and Entrepreneurial Education,University of Calabar, Nigeria, begianpuyeazu@gmail.com; OCID ID No. 0000-0002-5319-7076 adiebetiang @yahoo.com; OCID ID No. 0009-0000-1479-1630, cbben@yahoo.com

[2]Department of Agricultural Economics and Extension, Faculty of Agriculture & Life Science Federal University, Wukari Nigeria

Received June, 2025, Accepted August, 2025Published September, 2025

Abstract

This paper is a report of a research aimed at ascertaining the status of employment of required imperatives in quality preparation of agricultural education teachers as a long-term measure for achieving food security in South South geopolitical zone of Nigeria. The study was guided by one research question and hypothesis . The study employed the survey research design. A total sample of 205 respondents were selected from a target population of 407 Agricultural Education Lecturers were selected for the study using simple random sampling technique. The instrument named Quality Agricultural Teacher Preparation Imperatives for Food Security (QATPISQ) was used to elicit the needed responses. Data collected were analyzed using mean, standard deviation and population t-test statistical tools. The hypothesis was tested at 0.05 level of significance. The findings of the study indicated that the employment of all the listed required imperatives for quality preparation of Agricultural Education teachers as a long-term measure for achieving food security in South South geopolitical zone of Nigeria was significantly low. It was recommended among others that government should ensure that agricultural teacher training institutions in South South geopolitical zone of Nigeria are well equipped both in human and material resources to enhance quality agricultural teacher preparation in the zone.

Key Words: Food Security, Agricultural Education, Teacher Preparation Imperatives

Introduction

The most enduring and damaging impacts of Nigeria's oil and gas resources has been the long, steady decline of the country's agricultural sector. Once the primary source of government revenue and foreign exchange earnings, agriculture in Nigeria has suffered from decades of underinvestment, corruption, policy neglect, and lost opportunities. Today, despite its vast agricultural potential, the country is a net importer of food. Matemilola and Elegbede (2021) maintained that since the discovery of petroleum, Nigeria has rapidly become a major food importing nation. This is because the government has largely neglected the agricultural sector, viewing petroleum as a more viable resource for economic development. This situation quickly

polarized the nation into high- and low-income groups. Unfortunately, while only small fraction of the population benefited from the oil wealth, the bulk of the population suffered the misfortune of food insecurity as they can hardly afford the rising prices of imported foods.

The term "food security" first emerged in the mid-1970s, at the World Food Conference held in 1974. During the conference, food security was defined in terms of supply of food i.e. assuring the availability and price stability of basic foodstuffs at the international and national level (Food and Agriculture Organization (FAO), 2018). Since the World Food Conference of 1974, the concept of food security has evolved into what is now generally agreed as the standard definition which was adopted during the World Food Summit in 1996. The World Food Summit, 1996, agreed that food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life, (FAO, 2008). From this definition, four components of food security are identifiable: *availability, access, utilization and stability* of food. Based on the practical guide of Food Security Information for Action, all four components must be satisfied simultaneously to meet the objectives of food security.

Based on FAO (2012) and Simon (2012), the four components can be delineated as follows:

Availability: There has to be physical, social and economic access to sufficient and nutritious food by all people and at all times. Such food must satisfy the dietary needs and preference of the people. It is the amount of food physically available in a region or place. To a great extent, food availability depends on the level of local production, imports, stock levels and net trade in food items. Access: This refers to economic, social and physical access to food by all people at all times. That an adequate amount of food is available at the regional, national or international level does not imply it is accessible at household level. It must be locally accessible and affordable.

Utilization: Generally, utilization refers to the pattern in which the body makes use and benefits from the various food nutrients. Utilization is determined by food quality, nutritional values, and preparation methods and storage as well as feeding pattern.

Stability: This refers to the stability or consistency of food, availability, accessibility and utilization over time.it implies that, people are not at risk of losing access to food due to natural disaster, conflict or economic crises.

Accessibility is used to explain economic and physical access to food whereby people must have the resources to obtain enough food either by purchasing or growing it themselves. It refers to the ability of people to obtain sufficient, safe, and nutritious food to meet their dietary needs and food preferences for an active and healthy life.

All the components must be present simultaneously at all times. A person who has adequate access to quality food today is still considered food insecure if he has periodic inadequate access to food which may cause his nutritional level to deteriorate. Variation in weather conditions, political and economic instability, and price fluctuation are some factors that may impact on food security status.

Imperatives in agricultural teacher preparation refers to the urgent need to effectively train and equip future agricultural educators with the knowledge, skills and resources necessary to teach agriculture in a modern, relevant and impactful way. It is about prioritizing the preparation of teachers who can educate students in agriculture, ensuring they are ready to address complex issues like food security, sustainability, climate change and rural development (Robert, English and Alston 2020). It involves the critical, urgent actions or priorities needed to ensure the stability, productivity and resilience of agricultural systems in response to global challenges such as food insecurity, climate change and rural poverty. Okiror, Hayward, and Winterbottom, (2017) posited that agricultural imperatives refers to the strategic actions government and institutions must take-like reforming land use policies, investing in agricultural education, and supporting smallholder farmers- to guaranty long-term national food security and economic stability. In the context of education, agricultural education, and imperative is the essential need to prepare educators and learners with relevant skills, knowledge, and innovations required to address modern agricultural challenges like; climate-smart farming, biotechnology, sustainable practices among others. FAO

(2018) describes agricultural imperatives as urgent actions required to eliminate hunger, improve nutrition, and ensure sustainable agriculture. Agricultural imperatives are the non-negotiable goals for developing nations to boost rural economies, reduce hunger, and increase resilience to climate shocks through targeted interventions like irrigation, mechanization and farmer education. It must evolve as a discipline to address the grand challenges of our time including global food security, environmental sustainability and work force development all of which demands transformative teaching and leadership.

Food is no doubt, the most basic of all human survival needs. Although, so many efforts have been sunk in improving the quality as well as production of food, food insecurity remains prevalent, particularly in the global southern nations of Asia and Africa, and in Nigeria, malnutrition has resulted in death of many of its citizens. African Food Security Briefs (AFSB,2013) estimated that approximately one out of every three persons in the sub-Saharan Africa is undernourished (Akerele, Momoh, Aromolaran, Oguntona &Shittu, 2013). Achieving a sustainable economic development in Nigeria will continue to be a mirage without well-nourished and healthy people. In fact, failure to ensure food security has unavoidably resulted in many social problems including civil unrest and riots, arm robbery, kidnapping etc. Behnassi, Pollmann and Kissinger (2013) described food system and its governance as a process with complex web which many times overlapped or even contradicted with formal policies and regulations, and made even worse by the unwritten laws and practices which may not be susceptible to political subjugations. Food insecurity is therefore strongly linked with other global issues, such as population growth, surge in energy demand as well as completion for land and water and issues of climate change. Also, food security, as defined by the United Nations' Committee on World Food Security (UNWFS,2009) means that all people, at all times, have physical, social, and economic access to sufficient, safe, and nutritious food that meets their food preferences and dietary needs for an active and healthy life (Akinyele, 2009). Over the coming decades, a changing climate, growing global population, rising food prices, and environmental stressors will have significant yet uncertain impacts on food security. Adaptation strategies and policy responses to global change, including

options for handling water allocation, land use patterns, food trade, postharvest food processing, and food prices and safety and education in agriculture are imperatively needed. Nigeria is endowed with adequate agricultural resources but have acute food shortage (Ben, 2010). Nigeria needs more food for the increasing population to prevent starvation and malnutrition. Realizing the problem of food shortage, the government of Nigeria has embarked on a number of agricultural development programmes aimed at increasing food supply. The introduction of Agricultural Science and Agricultural Education curricula at primary/secondary school and colleges of education/university levels respectively, aims at increasing agricultural productivity and enhancing food security on long term basis, is a viable approach in this regard. United Nations' Committee on World Food Security (UNWFS,2009).

Agricultural Education is a formal academic programme of instruction systematically organized for in-school learners who are willing and ready to be prepared for a teaching career in agriculture. As an academic programme, Agricultural Education stresses in its content those professional skills required by a learner in professional education and vocational/ technical areas of agriculture. The vision is to produce globally competitive teachers who will contribute significantly to development through quality research and teaching. Agricultural Education Programme is hinged on the national philosophy of agriculture which emphasizes self-reliance based on the production of professional teachers of agriculture endowed with balanced approach between principles and practice of agriculture for academic and skill development ends. The objectives of agricultural education programme at the college of education/universities levels include:

a. to produce teachers with the right attitude, knowledge, and professional competences in agriculture;
b. to produce teachers who will be capable of motivating students to acquire interest in and attitude for agriculture;
c. to develop in the prospective teachers of agriculture appropriate communication skills for effective communication of agricultural information and skills to the students in the context of their environment;

d. to equip the prospective agricultural educators with adequate knowledge and ability to establish and manage model school farm effectively;
e. to provide a sound background to enhance further academic and professional progress of prospective agricultural educators;
f. to provide the high-level academic manpower in agricultural education needed at colleges of education, polytechnics, monotechnics, and universities;
g. and to provide a sound background in research skills and knowledge to enhance further academic and professional progress of prospective agricultural educators (Ben, 2014:1706)

By policy stipulations, the professional training of teachers of agriculture is two-fold: pre-service and in-service trainings (FGN, 2004). To implement this, certain institutions are charged with the responsibility to provide the required Pedagogical training. Colleges of Education and Universities in Nigeria are such institutions. Colleges of Education and Universities in Nigeria train agricultural teachers by offering National Certificate in Education (NCE) programme and Bachelor of Science Education degree programme respectively to candidates with Senior Secondary School Certificate and National Certificate in Education (NCE) qualifications. Universities also offer Master's and Doctoral degree programmes in Agricultural Education. The pedagogical training prepares perspective teachers to participate effectively in the educational system and usually involves exposure to varied courses in the following areas: General studies, core courses in education, courses in technical areas of agriculture, Teaching Practice and Research Project. At the completion of the programme, trainees are awarded appropriate certificates based on their overall academic performance.

Recently, they are also required to register with the Teachers Registration Council of Nigeria which is a body responsible for the licensing and admitting teachers into the teaching profession. At the fulfillment of these requirements, they are considered professional teachers of agriculture. The goal of teacher education in Nigeria includes, among others, 'the encouragement of

the spirit of enquiry and creativity in teachers, and providing them with the intellectual and professional background that will be adequate for their assignments and also make them adaptable to changing situations' (FGN, 2008:12). As entrenched in the policy, teacher education shall continue to take cognizance of changes in the methods and curriculum and teachers be regularly exposed to innovations in their profession.

The 21st century brought unprecedented changes to teacher education and training where the focus is increasingly on building competencies or attributes that would allow graduates

(1) a better preparation for job markets and

(2) an application of their learned knowledge and skills in their roles as 'global' citizens. Many aspects of competency in agricultural teacher education and graduate attributes (GA) have been discussed in recent years, at various levels including conceptualization, stakeholder identification and relative weighting, implementation strategies, curriculum approaches, staff development, quality assurance and the roles of students (Hughes & Barrie, 2010). Teaching is a versatile field that requires at all times the correct identification of indices of developments in the society. This responsibility makes it imperative that teachers of agriculture be an embodiment of a constant search for updated knowledge in related field of agriculture i.e. latest information, skills and breakthroughs. A concern for teacher quality brought about an ongoing argument over what should constitute the significant portion of agricultural teacher preparation programme in the 21st century. Obanya (2004) noted that gone are the days where all that was required of a teacher was subject matter knowledge. This platitude is becoming more apparent for the 21st century where rapid technological development implies that knowledge is no longer a 'once in a lifetime' experience for the individual. It is rather an asset, which constantly has to be updated. The teacher of agriculture therefore needs to be equipped with an acceptable standard. Improving agricultural teacher education programmes is a concern since no education can rise above the quality of its teachers (Federal Government of Nigeria (FGN), 2008).

To achieve food security through Agricultural Education, quality teacher preparation is a *sine qua non*. The issue of quality agricultural teacher preparation is far beyond obtaining paper qualification. The concept of quality in education is not easily perspicacious in simple terms. Reid & Ali (2020) pointed out that quality is a slippery concept, which implies different things to different people. For Eisner and Taylor (2023), quality is that which best satisfies and exceeds customers' needs and wants. Quality can be said to lie in the eyes of the beholder. This is because the consumers, who make the judgment on quality, do these by reference to the best comparable performance indicators. Quality refers to the standard of a phenomenon when it is compared to other things like it: how good or bad a thing is. Quality is truly a genuine position of a product, (goods and services) or a process attribute on good – bad scale. It is often associated or linked with defects and deficiencies in products or process. Quality is the capability of products, services or systems to knowingly satisfy those preconceived composite wants of the user(s) that are intelligently related to the characteristics of performance and do not cause major overt or convert reactions or actions by other people (Robinson, 2018). The concept of quality combines two aspects – the first relates to the features and attributes of the product, service or system. The Second is the absence of deficiencies in the product and system (Robinson, 2018).

Ajayi and Adegbesan (2017) perceived quality as the total of the features of a process, product or service on its performance in customers' or clients' perception of that performance. It is not just a feature of finished product or services but involves a focus on internal processes and outputs and includes the reduction of waste and improvement of productivity. Fadokun (2018) characterized quality by three interrelated and interdependent strands thus: (i) efficiency in the meeting its goals; (ii) relevance to human and environmental conditions and needs; and (iii) the exploration of new ideas, the pursuit of excellence and encouragement of creativity. Quality can therefore be described as the entire features and characteristics of a product or system that contain on it, the ability or all attributes to satisfy stated or implied needs. Quality education cannot be defined but easily identified when encountered. There are four views on excellence in quality

agricultural teacher preparation. These include: excellence in reputation, excellence in resources, excellence in content, and excellence in outcome.

In early 2004, the Common Wealth of Learning started working in the area of quality assurance with the aim to achieve the outcome of enhanced quality at all levels of education. They provided adequate guideline for formulating quality assurance policies as well as for adopting systems and procedures within teacher education institutions for enhancing the quality of the processes involved in teacher development (Ojo, 2012). Quality assurance in the view of Adegbesan, (2012) is the process of ensuring that the degree of excellence specified is achieved. Quality assurance is a system in which the delivery service of the quality of the product is assessed and compared with that required. For Campbell and Rosznyai (2002), quality assurance is all-embracing effort covering all policies and actions through which the quality of education is maintained and developed. In the view of Okonkwo and Udeze (2012), quality assurance encompasses the practice of checking the quality of agricultural education teachers graduated by teacher education institutions so that the standard of preparation will continue to be good. In the context of this study, quality assurance in terms of agricultural teacher preparation connotes the identification and application of educational practices for teacher preparation that will enhance effectiveness and efficiency. The importance of quality agricultural teacher preparation in Nigerian teacher education programmes can never be over emphasized. Adegbesan (2011) in related research stressed the need for quality assurance in agricultural teacher preparation system in Nigeria to include:

to serve as indispensable component of quality control strategy in agricultural teacher education;

to ensure and maintain high standard of agricultural teacher education at all levels;

to assist in the monitoring and supervision of agricultural teacher education;

to determine the adequacy of the facilities available for quality control in agricultural teacher preparation institutions.

Also, quality assurance would ensure how the financial resources available could be prudently and judiciously utilized in preparing an effective agricultural teacher.

Quality practices in agricultural teacher preparation is essential for guaranteeing trained agricultural teachers that can compete globally. For effective quality assurance in agricultural teacher education in Nigeria, the following performance indicators are very crucial: (i) Planning, (ii) monitoring (iii) evaluation (iv) supervision and inspection (v) quality control (vi) conformation to standard and (vii) feedback (Agbidi, Iyeke, and Ikeoji. (2022). Planning is the most important factor in quality agricultural education teachers' preparation programme. Planning involves design, process, method, curriculum, projects and building measures, production control/documentation, local content development and data processing. Planning also conceptualizes policy designs and works out static and dynamic balances of the teachers, initiates and design procedures, checking and approving them, and carrying out amendments as may be required through feedback from the end users (complaints).

A crucial educational practice that facilitates quality agricultural teacher preparation is monitoring. This involves the process of collecting data at intervals about ongoing projects or programmes within the school system. Ehindero (2011) avowed that the aim is to constantly assess the level of performance in agricultural teacher preparation processes with a view to finding out how far set objectives are being met. Evaluation involves arranging and reviewing data collected from ongoing training system to draw a conclusion on the status of the agricultural teacher's preparatory practices and programme. This is also to ensure how best to improve the mal-functional areas. Evaluation may be formative or summative. The strategy in this case is to see how the system can be assisted to improve on the present level of formative performance. Supervision might involve inspection, but it goes beyond inspection to include attempt at bringing about improvement in the quality of instruction. It involves quality staff as essential part of the process. It is a way of advising, grinding, refreshing, encouraging and stimulating staff (Onocha, 2002). In agricultural education teacher preparation, quality control may be described as strategies designed and

established to ensure correct quality in agricultural teacher preparation system at all levels. Conformation to standard is a vital educational practice that aids the maintenance of high level of confidence in the quality of agricultural teacher preparation programmes in Nigeria.

Teacher education and standard in Nigeria have been established since the inception of the country's education policy, but has not been taken seriously because of some inherent lapses in the system. Non-compliance to a set quality standard lead to an abuse of standard as is the case in most private institutions involved in the preparation of agricultural education teachers. Since quality assurance cannot be completed without constant check to evaluate conformity, compliance and progression of product, it is important that a system that assures quality feedback to appropriate authorities about any form of deformity, lack of compliance, or confirmation toward the set standard be established to ensure that the final product from every stage, involved in preparation of agricultural teachers maintain the recommended standard.

According to Ochuba (2019), in the school, some determinants of high-quality teacher education include goals of education, quality of the input and a well-organized school system that ensures the articulation and effective co-ordination of all aspects of school life. the author also pointed out that if the education industry would want to carry out its function of developing quality human capital, there would be the need for checks and balances through regular and effective supervision and inspection. This, in essence, is to ensure and maintain quality of output of the agricultural education teachers.

The quality of agricultural education teachers is enhanced by the quality of preparation and training. If the Nigerian vision to achieve food security through agricultural education in a long-term basis is to be realized, then there is need for quality preparation of agricultural teachers. Ugwu (2007) observed that every year, agricultural teachers are churned out from training institutions either as full time or part time, through outreach or sandwich programmes, but they are deficient in content and methodology. Such deficient agricultural education teachers cannot appropriately handle the subject matter perfectly well as far as school administration is concerned. The objective

of the administrative service in education is to provide efficient administrative and management control for the maintenance and improvement of the system (FGN, 2004). The system cannot be improved if our schools are stocked with low quality agricultural teachers who are bred under examination malpractice, who invariably lack the knowledge of the subject matter, spirit of enquiry, creativity and ability to carry out teaching assignments.

There is gap between the curriculum taught to teacher trainees and the reality that exists in schools. Such realties include dilapidated school buildings, lack of instructional materials including textbooks and writing materials for the pupils, sometimes overcrowded classes. Essentially, agricultural education teacher preparation programmes are deemed excessively academic and remote from the real challenges confronting modern classrooms in the 21st century. The emphasis on content delivery, examination and certification over real learning is a serious threat to quality. The current system of teaching and evaluation does not allow creativity, innovation and research, which are important tools for lifelong learning. The quantity and quality of input for agricultural teacher training programmes are also critical factors. Most teachers of agriculture are not motivated to teach, and often opt for teaching as a last resort, that is, after failing to secure training and employment into lucrative courses like Law, Medicine, Banking and Finance, etc. Since the admission quota for these courses is generally high, and for teacher education low, there is the perception that individuals who opt for teaching are 'academic squealers.

Agricultural education students depend on their own notes taken during lectures as learning materials are consistently inadequate. Hence written materials do not play a coherent role in the provision of a strong cognitive and structure-giving basis for the development of the required professional knowledge, skills and attitudes. The recruitment of lecturers into Agricultural Education programme in the country is at times politically engendered rather than by merit. This accounts for the preponderance of low calibre of agricultural education lecturers in teacher training institutions who do not only lack technical knowledge of agriculture but pedagogical background.

Problem of the study

The efficacy of agricultural teacher preparation programmes in Nigeria to prepare teachers for the 21st century is doubtful (Obanya, 2004, Ololube, 2006). Nigerian teacher training institutions have been critiqued for their inability to produce teachers who are properly grounded in pedagogy and content as well as having the ability to collaborate professionally in a working environment. Educationists observed that the transition from academic theories in training institutions to classroom practice has often been very sharp, suggesting that student teachers are not often properly groomed to put into practice current pedagogy and interactive skills that have been theoretically learnt. Izumi and Evers (2002) pointed out that complaints about newly appointed teachers of agriculture, who have low levels of numeracy and literacy skills as well as inadequate knowledge of agriculture, their basic area of specialization are common place. The qualities of agricultural education graduates from the teacher preparatory programmes who are joining the teaching profession are low and therefore present a critical issue.

Okebukola, (2005) also all confirm this status. The author maintains that agricultural education teacher training curriculum in the country does not fully acknowledge the 21st environment in schools and classrooms in terms of constructivist learning, learner-centered instructions and integrating technology. Effective instructional delivery in agriculture is important in addressing food insecurity as a long-term measure. Teachers of agriculture need improved knowledge and skill to survive and succeed. Growing evidence demonstrates that—among all educational resources—teachers' abilities are especially crucial contributors to students' learning (Gasey, 2007) In essence, principles and strategies must be put in place to ensure productive and successful partnerships in teacher preparation, especially in meeting the challenges of food insecurity in the country.

Also, increasing globalization and the emergence of the knowledge economy in the 21st Century are calling into question traditional perspectives on the transformational capacity of Agricultural education programme and the conceptions of teaching as a profession and the roles of

teachers of agriculture. How well teacher training programme respond to this and many other challenges will depend upon her capacity to provide expanded opportunities in the building of stronger competencies for the Nigerian Agricultural teachers through high-quality pedagogical training (Fadokun, 2018). These are the crux of the issues that engendered this study.

Purpose of the study

The purpose of this study was to assess how effective agricultural education teachers' preparation program influence food security in the South South geopolitical zone of Nigeria. Specifically, the objective of the study was to ascertain the extent of employment of imperatives in quality preparation of agricultural education teachers as a long-term measure for achieving food security in South South geopolitical zone of Nigeria.

Research question

The study was guided by this question. To what extent are required imperatives employed in quality preparation of agricultural education teachers as a long-term measure for achieving food security in South South geopolitical zone of Nigeria

Statement of hypothesis

This hypothesis was postulated to direct the study: The extent of employment of the imperatives for quality preparation of agricultural education teachers as a long-term measure for achieving food security in South South geopolitical zone of Nigeria is significantly low.

Methodology

The study employed a survey research design. The study was carried out in universities which offer Agricultural Education programme in South South geopolitical zone of Nigeria. A total sample of 205 respondents from a target population of 307 of agricultural education lecturers were selected for the study using simple random sampling technique. The instrument named Quality

Agricultural Teacher Preparation Imperatives for Food Security (QATPFSQ) was the structured instrument used to elicit the needed information from respondents. Part 1 of the instrument elicited information on personal data of respondents, while Part 2 focused on the major variables under investigation. Test-retest method of reliability was used to obtain the reliability coefficient of 0.88, which was declared reliable for the study. Responses which were assigned nominal values were scored as follows: very high extent (VHE) - 4 points; High Extent (HE)- 3 points; Low Extent (LE) -2 points; and Very Low Extent (VLE) - 1 point. Data collected were analyzed using mean, standard deviation and population t-test statistical tools. The hypothesis was tested at 0.05 level of significance. Data were collected by administering the instrument to respondents in each of the institutions by the researchers and some trained research assistants.

Results

The result of the study is presented based on the research question and the hypothesis of the study. Each research question and hypothesis were re-stated

Research question

To what extent are imperatives employed in quality preparation of agricultural education teachers as a long-term measure for achieving food security in South South geopolitical zone of Nigeria. The related result is presented in Table 1

The results in Table 1 indicated that all the 20 items recorded mean scores ranged 2.05 - 2.92. These values were above the cut-off point of 2.50 on the four-point scale. This implied that all respondents agreed that all the listed imperatives were employed to a low extent in the preparation of agricultural education teachers as a long-term measure for achieving food security in South South geopolitical zone of Nigeria. The result also revealed that all the 20 items recorded standard

deviation values ranged 0.76 - 0.50 indicating that there was less variability in the opinions of the respondents.

Table 1: Mean and standard deviation analysis of respondents' opinions on extent of employment of imperatives for quality preparation of agricultural education teachers as a long-term measure for achieving food security in South South geopolitical zone of Nigeria

S/N	Imperatives	$\overline{X}$	SD	Remark
1	Developing agricultural education curriculum with clear goals and objectives	2.58	0.52	**
2	Adapting agricultural education curriculum and the requirements to a dynamic teaching experience with emphasis on collaborative tools such as Blogger, Wikispaces, MySpace, Twitter etc to enhance and captivate learners	2.42	0.63	**
3	Recruiting lecturers who could model the behaviours expected from the students (tolerance, global awareness, and reflective practice)	2.24	0.50	**
4	Provision of standard admission requirements that attracts highly qualified students into agricultural education programme	2.10	0.62	**
5	Building in graduation requirements into agricultural education programme	2.28	0.65	**
6	Building in quality assurance elements into agricultural education programme to facilitate check and balances in its implementation	2.58	0.56	**
7	Integrating into the curriculum activities that will enhance induction, certification and licensing of quality agricultural teacher educators	2.08	0.54	**
8	Integrating extended clinical experiences, supervised practicum and student teaching opportunities	2.28	0.56	**
9	Adapting agricultural education curriculum and the requirements to continuous professional development of teachers of agriculture	2.19	0.66	**
10	Integration of context-based education issues of different academic education sub-fields to create an applied understanding of education theory, relevant to Nigerian schools	2.18	0.62	**
11	Organizing varied learning tasks and experiences designed to assist student teachers in developing an effective classroom practice and modelling learning materials themselves	2.26	0.54	**
12	Creation of purposefully designed and varied learning experiences through lecturing, group work, self-learning etc.	2.24	0.54	**
13	Adapting agricultural education curriculum and the requirements to enable learners further develop their ability on how to design their own learning programmes	2.92	0.58	**
14	Inclusion of method courses in agricultural education programme to provide open-ended learning experiences which promote conceptual understanding,	2.32	0.62	**

	development of practical skills and positive attitudes rather than rote-learning			
15	Provision in agricultural education curriculum assessment facilities both in practical and written forms to provide students with the opportunity to showcase their conceptual understanding, skills and attitudes,	2.30	0.76	**
16	Developing strong core curriculum taught in the context of practice and grounded in knowledge of child and adolescent development and learning	2.28	0.62	**
17	Integrating extended clinical experiences, supervised practicum and student teaching opportunities	2.30	0.60	**
18	Provision in agricultural education curriculum extensive use of case methods, teacher research, performance assessments, and portfolio evaluation that apply learning to real problems of practice	2.32	0.56	**
19	Encouraging school- and university-based faculty collaborations in transforming teaching, schooling, and agricultural teacher education	2.05	0.55	**
20	Provision in agricultural education curriculum purposefully designed and varied learning experiences through self- and peer-assessment aimed at constructing conceptual knowledge, skills and attitudes directly related to professional competencies	2.15	0.58	**

*High extent; ** Low extent, Moderate Extent

Hypothesis one

The extent of employment of the imperatives for quality preparation of agricultural education teachers as a long-term measure for achieving food security in South South geopolitical zone of Nigeria is significantly low. The result of the analysis is presented on Table 2

Table 2: Population t-test analysis of the extent of employment of the imperatives for quality preparation of agricultural education teachers as a long- term measure for achieving food security in South South geopolitical zone of Nigeria

Variables	N	$\bar{x}$	M	SD	t-cal.
The extent of employment of the imperatives for quality preparation of agricultural education teachers as a long- term measure for achieving food security	205	2.11	17.50	4.06	20.21

P=0.05; df = 204; critical value 5.64

From the data in Table 2, the calculated t-value of 20.21 was greater than the critical t-value of 5.64 at 204 degrees of freedom at 0.05 level of significance. This implied that the extent of employment of the imperatives for quality preparation of agricultural education teachers as a long-

term measure for achieving food security in South South geopolitical zone of Nigeria was significantly low. The null hypothesis was therefore accepted.

Discussion of findings

The findings of the study indicated that the employment of all the required imperatives for quality preparation of agricultural education teachers as a long- term measure for achieving food security in South South geopolitical zone of Nigeria was significantly low. Okonkwo and Udeze (2012) in a related study confirmed the finding of this study when they pointed out the need for agricultural education programme to de-emphasize paper qualification but rather placed emphasis on the three major success factors in total quality optimization in teacher training which include quality product (teachers), cost and time. Similarly, Okebukola (2005) found out from an empirical study that in addition to maintaining quality assurance in agricultural teacher preparation and development in Nigerian higher institutions, it is imperative to establish quality assurance in the infrastructural facilities of teacher education programmes especially on the availability of infrastructural development programmes and adequacy of the facilities in terms of currency and relevance to purpose. Ukeje's (2006) finding in a related study adds credence to this finding that lecturers supervising student teachers must be qualified professional teachers of agriculture. The finding was also in line with a related study by Ben (2014) which stressed on the integration of Information and communication Technology (ICT) literacy programmes into pre-service teacher training curriculum as a strategy for its optimization in the 21st Century. ICT literacy in this case involves using digital technology, communications tools and/or networks to access, manage, integrate, evaluate, and create information in order to function in a digital knowledge society.

The role of agricultural education in combating food insecurity on a long- term basis is not in doubt. Quality preparation of agricultural education teachers remains sacrosanct in this regard. Agricultural educators seem one of the determinants of food security since they produce the teachers who invariably through instructional delivery, impact food production, food availability, stability of food supplies, and access to food which in turn influence the amount of food consumed.

Therefore, one can rightly link food insecurity in Nigeria within efficient and/or faulty implementation of agricultural teacher education programmes in some of the training institutions in Nigeria. As Nigeria faces unprecedented challenges both in the education and agricultural sectors, the need for schools to have agricultural educators with quality viewpoint and skill set has never been more obvious.

Dynamic, visionary teachers of agriculture are needed to shape new generations of citizens who will have the ideas and abilities to lead and guide our country's agricultural ventures. A 21st century viewpoint includes teachers across the pre-primary, primary, secondary and tertiary education spectra. Teachers have the responsibilities of encouraging and empowering, guiding and shaping young minds into viable agricultural ventures which will invariably impact positively on food security. Lighting the fires of learning and discovery will always be what a good teacher does. This underscores the need of teacher training institutions to develop and implement agricultural education programmes that are qualitative if food security is to be ensured.

Conclusion

The extent of employment of basic imperatives for quality preparation of agricultural education teachers as a long- term measure for achieving food security in South South geopolitical zone of Nigeria is signific-antly low. For food security to be achieved through agricultural education as a long- term measure, Agricultural education teachers need to keep pace. Preparing prospective teachers to educate such students involves a wide spectrum of training. Technical skills should be a major component, as will critically thinking and problem-solving abilities. Teaching will have to go beyond classroom rituals. Prospective teachers of agriculture have to be equipped with a range of skills far removed from conventional skills. The onus lies with the trainers of agricultural educators in the country.

Recommendation

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

1. The preparation of agricultural education teachers should focus on a paradigm shift making teachers aware of the need to move from the traditional role of instructors to the role of facilitators
2. Agricultural educator trainers should build critical thinking skills among prospective teachers of agriculture by building into Agricultural Education curriculum problem solving and critical thinking contents.
3. The government should ensure that agricultural teacher training institutions are well equipped both in human and material resources to enhance effective implementation of quality agricultural education programme with basic imperatives in utmost consideration.
4. Federal ministry of education should review educational policies in agriculture to impact on its effectiveness in improving food security.
5. Universities and research institutions should integrate climate- smart agriculture practices in farmer training programmes in improving food security.

References

Adbidi, S.S., Iyeke, A. P., & Ikeoji. C. N. (2022).Developing partnership for quality agricultural education in Nigeria: A Narrative -Textural Case Study. *Journal of Education and Practice 13(4), 23-28.*

Adegbesan, S.O. (2011). Educational research and reviews, Academic Journal. 6, 147-151

Ajayi A.O. & Adegbesan, S.O. (2017). Challenges Facing Teacher Education in Nigeria: Implication for Curriculum Development. *Journal of Educational and Social Research, 7(1), 97-102.*

Akinyele, I.O. (2009). *Ensuring Food and Nutrition Security in Rural Nigeria: An Assessment of the Challenges, Information Needs, and Analytical Capacity*. Abuja: International Food Policy Research Institute (IFPRI). Basic Education (UBE) organized by the Faculty of Education, University of Ilorin, Nigeria

Behnassi, M. Pollmann, O. & Kissinger, G. (2023).*Sustainable Food Security in Behnassi the Era of Local and Global Environmental Chang*e. Springer Dordrecht Heidelberg, New York. https://doi.org/10.1007/978-94-007-6719-5

Ben, C. B. (2010). *Fundamentals of Agricultural Education.* Calabar: El-Summer Publishers

Ben, C. B. (2014). Re-engineering pedagogical preparation of Agricultural Education teachers in Nigerian Universities: The 21st Century Imperatives in M. P Okom, G. O. Ozumba, C. O. Ndifon and E. E. Eremi (Eds.) *The dynamics of Educational Engineering in the 21st Century: A Colloquium in Honour of Professor James Epoke*. Calabar: University of Calabar Press

Ehindero, S. (2011). The Pitfalls of UPE and the need to enhance quality in the implementation of universal basic education. Paper presented at the National Workshop on Universal

Eisner, E. W. & Taylor F. O (2023). The pursuit of Quality Education from Ancient times to digital age. *International Journal of Education Management. 27(1019-10420).*

Fadokun, Y. B. (2018). Educational assessment and quality assurance implication for principal instructional leadership roles. Paper presented at the 31st Annual Conference ofInternational Association for Educational Assessment at Abuja on 4th – 9th September, 2018From quality control to quality assurance: Panacea for quality education in Nigerian schools. Paper presented at the Third Annual Conference of the National Association of Educational Administration and Planning, University of Benin, June 12- 17.

FAO (2018). An Introduction to the basic concepts of food security. In: *Food Security Information for Action: Practical Guides*, EC-FAO Food Security Programme.

Federal Government of Nigeria FGN (2008). *National policy on education*, Lagos: Federal Ministry of information.

Gasey, I. (2007). Quality Assurance. Available at *http://www/software.com/quality/assurance*. *Retrieved on 10/04/ 2021*.

Hughes, C. & Barrie, T. (2010). Eight habits of highly effective 21st century teachers. *Interface, issue 9.http://www.interfacemagazine.co.nz/articles.cfmcid=10&id=28.*

Izumi, L. & Evers, M.W. (2012). Introduction. In Izumi, L. & Williamson, M.E. (Eds). *Teacher quality.* Stanford: Hoover Institution Press.

Matemilola, S. & Elegbede, I. (I. (2021).The). The Challenges of Food Security in Nigeria. *Open Access Library Journal, 4: e4185. https://doi.org/10.4236/oalib.1104185*.

Obanya, P. (2004). *The dilemma of education in Africa*. Ibadan: Heinemann Educational Books.

Ochuba, V. O. (2019). Improving the quality of education in effective inspection of schools http://findarticles.com/p/articies/miqa3673/is4129. Retrieved 27/4/2021

Ojo, M. O. (2012). Quality teacher education: The pivot of national development, Nigerian *Journal of Professional Teacher* 2, 45-49

Okebukola, P. (2005). Quality assurance in teacher education. A publication of the Committee of Deans of Education in Nigerian universities.

Okiror, J. J., Hayward, G., & Winterbottom, M. (2017). Towards in-service Training Needs of Secondary School Agriculture Teachers in a Paradigm Shift to Outcome-Based Education in Uganda. *Journal of Agricultural Education and Extension, 23(5)415-426.*

Okonkwo, V. O. & Udeze, H. E. (2012). Quality assurance in teacher education in Nigeria: Challenges and the way forward. *Journal of Research and Development,* 4, 345-350

Ololube, R. (2006). *Chambers 21st Century Dictionary*. India: Allied Chambers Ltd.

Onocha, C. O. (2002). Quality assurance in teacher education. A paper presented at the NTI's 25th Anniversary Celebration, Kaduna, Nigeria

Reid, N. & Ali, A.A. (2020) Developing Quality Education; A Research Base Approach. *Journal of making sense of learning: 4(361-384.*

Robert, R., English, C.W., & Alston, A.J. (2020). Fostering Identity Development in Teacher Preparation: Service-Learning's Role in Empowering Agricultural Education Majors to teach STEM Concepts. *Journal of Agricultural education, 61(3) 214-232.*

Robinson, M.J. (2018). The Impact of Leadership on Student Outcomes: An Analysis of the Differential Effects of Leadership types. *Journal of Educational Administration, 44(5) 635-674.*

Simon, G. A. (2012). *Food Security: Definition, Four Dimensions, and History*. FAO, Rome

Ugwu, R. N. (2007), Motivation: an instrument for optimization of service delivery for personnel management in secondary schools. In B.G. Nworgu, (Ed). *Optimization of Service Delivery in education Sector: Issues and Strategies*. Nsukka: University Trust Publishers

Ukeje, J. & Durosaro, D. O. (2006). Teacher education in Nigeria: Past, Present and Feature Challenges. *Pacesetters Journal of Oyo State College of Education 13(1) 44-54.*