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## **Educational Practices for Optimization of Pre-service Training of Quality Agricultural Teachers in Nigeria**

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### **Authors' contributions**

*This work was carried out in collaboration between both authors. Author AMU initiated the study and wrote the spent draft of the manuscript. Author CBB performed the statistical analysis, wrote the protocol and wrote the final the manuscript. Author CBB also managed the literature searches of the study. Both authors read and approved the final manuscript.*

**Original Research Article**

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### **ABSTRACT**

This study was aimed at determining the trainers' perception on the educational practices for optimization of pre-service training of quality agricultural teachers in Nigeria. Two null hypotheses were formulated to guide the study. The target population for this study was 2040 respondents comprising 1800 lecturers from universities and 260 from colleges of education. A total of 204 university lecturers and 26 college lecturers were selected for the study using simple random sampling technique. Educational Practices for optimization of pre-service Teacher Education Questionnaire (EPOPTEQ) was the structured instrument used to elicit the needed information from the respondents. The data collected were analyzed using mean, standard deviation and independent t-test statistical tools to test the hypotheses of the study. From the analyses, it was found out that educational practice that could optimize pre-service training of quality agricultural teachers in Nigeria included among others the adoption of quality content and methodology, efficient administrative and management control. These however were not effectively utilized in pre-service teacher education training programme in Nigerian Universities and Colleges of Education in Nigeria. Based on these findings, it was recommended that all these educational practices

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should be fully integrated into pre-service training programmes of agricultural teachers in Nigeria for optimum productivity.

*Keywords: Agricultural teachers; pre-service training; optimization of pre-service training; agricultural teacher training; educational practices for agricultural teacher training.*

## 1. INTRODUCTION

Education is a complex process of socialization that transforms individuals into social beings equipped with the necessary tools to participate fully in the dynamics of life. *Education in the largest sense is any act or experience that has a formative effect on the mind, character or physical ability of an individual* [1]. In its technical sense, education is the process by which society deliberately transmits its accumulated knowledge, skills and values from one generation to another [2]. Enumerated simply, it can be seen as: (i) Act or process that leads a person to better understanding of the situations in his life; (ii) The process of imparting and acquiring knowledge and training to grow one's intellectual and mental capabilities, so as to make mature decisions in different situations. (iii) The learning process by which any knowledge can be obtained and (iv) An enlightening experience [3]. Whatever perspective, the ultimate aim of education is that of transforming an individual. Education is man's most important enterprise. If we include self education, then on it depends 'all that makes a man'; everything that raises man above or puts him ahead of the other animal. Man can only become man by education. He is merely what education makes him. By implication [4], the ultimate goal of education is that of transforming man.

The transformation of the individuals can only be achieved through good quality teachers who are dispensers of education. Nigeria can make use of the tremendous power of education through quality teacher education to tackle its numerous problems and by so doing achieve rapid national development [5]. Teachers are therefore at the vanguard of bringing about reforms in Nigeria's polity and economics, especially in this present time when diversification from petroleum monoculture economy to agriculture is advocated. One of the prime functions of the school is to provide a setting within which the learners can grow intellectually. This can only be accomplished through learners' exposure to information, knowledge and facts. Books can help, so can numerous other types of learning materials. But there stands a teacher on the stage, often front and centre [6]. What he knows can make a difference. What he does not know can be an irreparable loss. It is incontrovertible fact that the quality of education that Prospective teachers receive during training will in turn determine the quality and quantum of reforms and empowerment that they will subsequently inculcate into their learners. That is to say that good teacher dispenses good teaching which in turn, produces high quality workforce that would work towards the achievement of the national goals of both education and agriculture. Conversely, the consequence of poorly prepared teachers is the production of half-baked teachers who cannot teach, plan, organize, manage and implement policies in schools.

By definition, agricultural education is the acquisition of skills and knowledge in agriculture with the view to imparting these knowledge and skills into prospective teachers of agriculture and farmers for better productivity. It also involves farming and agro-allied business enterprises. Agricultural education is concerned with the teaching of agriculture, natural resources and soil management through hands on experience and guidance to prepare

students for entry level jobs [7]. It is a formal programme of instruction systematically organized for the school learners who are preparing for teaching careers in agriculture.

The basic goal of Agricultural Education is to develop in a prospective teacher the professional and technical competencies needed to function effectively as a teacher of agriculture. The goal of agricultural teacher education in Nigeria includes, among others, the encouragement of the spirit of enquiry and creativity in agricultural teachers and providing them with the intellectual and professional background that will be adequate for their teaching assignments and also make them adaptable to constantly changing situations [8]. Section 8B (item 74) of the policy as modified in line with this study noted that agricultural teacher education shall continue to take cognizance of changes in the methods and curriculum and teachers of agriculture be regularly exposed to technological innovations in their profession.

There are different levels of agricultural teacher training Programmes in Nigeria. By the policy stipulations pre-service training is one of the two folds of the professional training of agricultural teachers. A number of training institutions is charged with the responsibility to provide pre-service training for agricultural teachers in Nigeria. Universities train agricultural teachers for senior secondary (high) schools by offering Bachelor of Education (B.Ed.) or Bachelor of Science Education {B.Sc.(Ed.)} degree programmes in Agricultural Education to both Senior Secondary School graduates and Junior Secondary School teachers who already have acquired Nigeria Certificate in Education (NCE) qualification. They also offer Master's and Doctorate degree programmes in agricultural education. Colleges of Education train agricultural teachers for primary and junior secondary schools. The NCE is the minimum qualification for teaching in primary and Junior Secondary School levels in Nigeria. Some colleges also offer NCE pre-primary courses in order to produce teachers for the pre-primary level of education. Polytechnics offer diploma programmes in education for the production of teachers for technical and vocational colleges offering Agricultural Science as subjects. The National Teachers' Institute (NTI) runs Nigeria Certificate in Education (NCE) programme in agriculture through a Distance Learning System (DLS).

The pre-service training usually involves exposure to varied concepts of teaching and learning in agricultural contents. The programme covers the following areas:

1. Exposure to general studies courses
2. Study of the main elements of education including philosophy, sociology, psychology, theory and history of education, comparative education, school administration, classroom management and subject pedagogy
3. Studies in different technical areas agriculture including Animal Science, Crop Science, Agricultural Economics and Extension, Agricultural Engineering and Wildlife and Forestry
4. Teaching practices during which the agricultural teacher trainee is expected to imbibe the culture of teaching
5. Research project in which the trainee is expected to conduct a research and produce report

At the end of pre-service training, trainees are awarded degrees or certificate depending on the status of the training institutions involved. In addition and very recently, graduands are also required to register with the Teachers Registration Council of Nigeria which is a body responsible for the licensing of teachers in general and agricultural teachers in particular. At the fulfillment of these requirements, they are considered professional teachers of

agriculture. The issue of quality agricultural teacher preparation in Nigeria is far beyond obtaining mere paper qualification after pre-service training. How qualitative are the products?

The concept of quality in education in general and pre-service teacher training in particular is not easily perspicacious in simple terms. Conventionally, quality is a slippery concept, which implies different things to different people. Also quality is that which best satisfies and exceeds clients' needs and wants [7]. Clients, who make the judgment on quality, do so in preference to the best comparable performance indicators. Quality refers to the standard of a phenomenon. 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 covert reactions or actions by other people [8]. Here concept of quality combine 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. Quality is perceived as the total of the features of a process, product or service on its performance in customers' or clients' perception of that performance [9]. 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 wasted and improvement of productivity. Quality is characterized by three interrelated and interdependent strands [10] thus:

1. Efficiency in the meeting of its goals.
2. Relevance to human and environmental conditions and needs.
3. Exploration of new ideas in pursuit of excellence and encouragement of creativity.

It is generally conceived that quality training in education cannot be defined but easily identify when encountered. He identifies four premises in quality of training in education to include: excellence in reputation, excellence in resources, excellence in content and excellence in outcome. These premises are very important in pre-service preparation agricultural teacher.

The assurance of quality in pre-service agricultural teacher preparation in Nigeria however, can never be over emphasized. The importance of this include [11]: 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 monitoring and supervision of agricultural teacher education, to determine the quality of teachers input in agriculture, to determine adequacy of the facilities available for quality Control in agricultural educational institutions and to ensure how the available financial resources could be prudently and judiciously utilized in preparing an effective agricultural teacher.

For quality agricultural teacher training in Nigeria, consideration should be given to quality performance indicators such as planning, monitoring, evaluation, supervision inspection, quality control, conformation to standard, feedback. Planning is the most important aspect of quality assurance in teachers be it goods or services in agricultural teachers education. Planning carries out 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, initiate and design procedures, checking and approving them and carrying out amendments as may be required through feedback from the end users complaints. Monitoring involves the process of collecting data at intervals about ongoing projects or

programmes within the school system. The aim is to constantly assess the level of performance in agricultural teacher preparation processes with a view of 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 programmed agricultural teachers preparatory practices and to ensure how best to improve the mal-functional area. Evaluation may be formative or summative. 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 [12]. Quality control guarantees and ensures that quality standards of product are maintained at all times, through close monitoring and checking at each stage of production. In agricultural teacher preparation, quality control may be described as strategies designed and established to ensure correct quality in the interior of agricultural teacher education system at all levels. Conformation to Standard is a vital educational practice that maintains high level of confidence in the quality of agricultural teacher preparation programmes in Nigeria. Teacher education and standard in Nigeria have been set since the formulation of education policy in the country, but has not been taken seriously because of Nigerian factor. Non-compliance to a set quality standard lead to an abuse of standard as is the case in most institutions involved in the preparation of agricultural 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.

The quality of agricultural teachers is enhanced by the quality of preparation given to the teachers in training. Every year, agricultural teachers churned out of training institutions seem deficient in content and methodology. Such agricultural teachers are of low quality stock, lack knowledge of the subject matter, lack spirit of enquiry and creativity and are incapable of carrying out teaching assignments [13]. It was upon this background, that this study was conceived; to ascertain educational practices for optimization of pre-service training of quality agricultural teachers in Nigeria.

The efficacy of the teacher training programmes in Nigeria to prepare Agricultural education teachers 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 universities 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 [14]. As pointed out in Education Sector Analysis [15], there are complaints about newly appointed teachers, who have low levels of numeracy and literacy skills as well as inadequate knowledge in their chosen areas of subject specialization, are common place. The low quality of graduates from the teacher training colleges and universities who are joining the teaching profession is a major issue. The assessment tests make it clear that students enter colleges and universities with very low levels of cognitive skill. Students are caught in a cycle of low achievement, teachers with inadequate cognitive skills and then further low achievement by students [14].

Since teachers are key personnel in realizing the national goal of a knowledgeable society, essentially prospective teachers should be adequately prepared to shoulder the heavy responsibilities entrusted to them and be capable of positively influencing the students in

their thoughts, behaviours and lifestyle [16]. It is pertinent to emphasize information literacy in the context of teacher education programmes. Information literacy comprises effective information seeking, informed choice of information sources, Information evaluation and selection, using a range of media to one's best advantage, awareness of issues to do with bias and reliability of information and effectiveness in transmitting information to others [17].

In addition, [18] stressed on the integration of Information and communication Technology (ICT) literacy programme into pre-service teacher training curriculum as a strategy for its optimization. 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 knowledge society [19].

In a related study [20] concluded that effective teaching requires more than a basic understanding of educational theory and classroom management. Pre-service teacher training programme should provide the trainee opportunity to acquire ability to collaborate with other educators to learn how to implement new technology in the classroom and how to prepare students to enter a global economy. This will enhance the task of effective classroom management, making content relevant to students daily lives, developing critical thinking in her/his students, working with new and evolving technologies to create meaningful and effective lessons, giving students understanding and importance, having students work in teams to ensure that all students receive an equal education regardless of what teacher they have and finally staying current on new issues and developments in the field of teaching as well as content areas.

The use of case notes in teaching is also emphasized as a dynamic strategy for pre- service teacher education optimization measure. It is worth noting that many professions, including law, medicine, psychology and business, help candidates bridge the gap between theory and practice—and develop skills of reflection and close analysis—by engaging them in the reading and writing of cases. Many highly successful teacher education programs require candidates to develop case studies on students, on aspects of schools and teaching, and on families or communities by observing, interviewing, examining student work and analyzing data they have collected. Proponents argue that cases support both systematic learning from particular contexts as well as from more generalized theory about teaching and learning [21]. Effective teacher education programmes should have a clinical curriculum as well as a didactic curriculum [21], therefore requiring a major overhaul of the relationships between universities and schools.

As entrenched in the Nigerian National Policy of Education, the importance of quality teacher which was developed in 2007 [22]. The policy hopes to re-orientate and restructure teacher education through the following objectives: create adequate incentives to attract and retain capable teachers; recommend rigorous admission and graduation requirements and apply them consistently, ensure that teacher education institutions are well equipped both in human and material resources, recommend that teachers have sufficient mastery of content and varied methods of teaching that are subject-specific, ensure structured, effective and supportive supervision of teaching practice and induction as well as certification and licensing, Produce sufficiently trained teacher educators capable of imparting and modelling desired knowledge, skills and attitudes, motivate teachers and provide opportunities for their continuing professional development, retention, advancement and improvement in their chosen career and recommend that teachers need to constantly upgrade their skills in order to remain competent and relevant.

To achieve the above, policy statements were developed around the key education challenges covering admission and graduation requirements, curriculum and instruction and quality assurance issues, clinical practice, induction, certification and licensing, quality of teacher educators and continuous professional development for in-service teachers. One must note that there is yet to be a comprehensive strategy for effective translation and implementation of these policy statements [14].

Also, the National Economic Empowerment and Development Strategy (NEEDS) which is the national translation of the Millennium Development Goals in Nigeria, recognized education as a vital transformational tool and a formidable instrument for socio-economic empowerment [23]. The NEEDS document set some goals for education including improving the quality of education at all levels including teacher education. As a quality assurance measure at the university level, the National Universities Commission developed in 2005 Minimum Academic Standards (MAS) and Benchmark Minimum Academic Standards (BMAS). Minimum standards guide academic operations, philosophy, objectives, contents, admission requirements, and course contents, as well as the overall physical facilities for all academic programmes in Nigerian universities. The National Commission for Colleges of Education (NCCE) also published minimum standard for teacher education programmes. It provides a basis on which to consider what kinds of initial teacher education programmes best suit the preparation of primary and secondary school teachers; focusing on the 'development of education programmes that will optimize teacher opportunities to demonstrate knowledge and skills designated as important for them to engage with the demands of a highly competitive, rapidly changing and technologically oriented society [24]. These standards are organized around three broad themes: professional knowledge, professional practice and professional engagement [25]. This theme is divided into five core areas covering educational practices, teacher standards, learning opportunities; assessment and teaching practice [25]. This synchronizes with strategies for optimization of pre-service training of quality agricultural teachers in Nigeria.

The major purpose of this study was to determine the trainers' perception on the educational practices for optimization of pre-service training of quality agricultural teachers in Nigeria. Specifically, the study sought to:

1. Determine educational practices that could optimize pre-service training of quality agricultural teacher training in Nigeria.
2. To ascertain the extent to which educational practices for optimization of pre-service training of quality agricultural teachers in Nigeria are employed by teacher training institutions in Nigeria.

The following hypotheses were postulated to direct the study:

1. There is no significant difference in the mean ratings of respondents on educational practices that could optimize pre-service training of quality agricultural teacher training in Nigeria.
2. There is no significant difference in the mean ratings of respondents on the extent to which educational practices for optimization of pre-service training of quality agricultural teachers are employed by teacher training institutions in Nigeria.

## **2. METHODOLOGY**

The study employed a survey research. The study was carried out in Nigeria. Three States were involved in the study namely; Enugu, Cross River and Akwa Ibom States. The target population was 2040 respondents comprising Education lecturers from universities and 260 from Colleges of Education. A total of 204 and 26 lecturers from the university and College of Education respectively were selected for the study using simple random sampling technique. Educational Practices for optimization of Pre-service Teacher Education (EPOPTE) was the structured instrument used to elicit the needed information from respondents.

The data collected were analyzed using the mean, standard deviation and independent t-test statistical tools. An independent t-test statistical tool was used to test the hypotheses of the study. The questionnaire was divided into two parts: 1 and 2. Part 1 sought to elicit information on personal data of respondents. Part 2 focused on the major variables under study. Responses which were assigned nominal values were scored as follows: Strongly Agree (SA) - 4 points; Agree (A)- 3 points; Disagree (D) -2 points; and Strongly Disagree (SD) - 1 point. On decision rule, a response with a mean score value of 2.50 and above was regarded as agree while that with mean response below 2.50 was deemed disagree. The decision rule with respect to acceptance and rejection of the hypothesis was applied as follows: where the recorded calculated t-value was greater than critical value, the hypothesis was rejected. Also when the recorded calculated t-value was less than critical value, the null hypothesis was retained. All hypotheses were tested at 0.05 level of significance.

To determine the reliability of the instrument, trial testing was done using 50 respondents drawn from the population of prospective respondents who were not involved in the main study. Test-rest method of reliability was used to determine the reliability coefficient of the instrument. Here the researchers administered to the same group of respondents the questionnaire twice giving two weeks interval between each administration. The scores for the two sets of administration were correlated using Pearson's Product Moment Coefficient statistics. The reliability coefficient of 0.78 and 0.81 were obtained in respect of educational practices that could optimize pre-service training of quality agricultural teacher training and the extent to which educational practices for optimization of pre-service training of quality agricultural teachers are employed by teacher training institutions in Nigeria respectively. The data were collected by administering the instrument to respondents in each of the institutions. The instrument was administered only to respondents who were willing to volunteer information. The questionnaire was administered by the researcher and three trained research assistants.

## **3. RESULTS AND DISCUSSION**

### **3.1 Research Hypothesis One**

There is no significant difference in the mean ratings of respondents on the educational practices that could optimize pre-service training of quality agricultural teacher training in Nigeria.

Table 1 presents data on the opinions of respondents on the educational practices that could optimize pre-service training of quality agricultural teachers in Nigeria. Data show that 19 items, items 1-2 and 4-20 recorded calculated t-values range of -2.90 - 1.71. These values were less than critical t-value of 1.960 at 0.05 level of significance and 240 degree of



freedom. The null hypothesis was upheld for these 19 items. This implied that there was no significant difference in the opinions of respondents on the educational practices that could optimize pre-service training of quality agricultural teachers in Nigeria in respect of these items.

**Table 1. t-test analysis of respondents' opinions on educational practices that could optimize pre-service training of quality agricultural teachers in Nigeria**

S/n	Educational Practices	$\bar{X}_1$	SD <sub>1</sub>	$\bar{X}_2$	SD <sub>2</sub>	t-cal	Rmk
1	Increasing years of teacher training programme to five years or degree and four years for NCE	3.49	0.52	3.67	0.50	-1.14	**
2	Establishing well monitored supervisory team to ensure service delivery to the agricultural student teachers	3.47	0.53	3.38	0.49	0.79	**
3	Effective supervision and monitoring of teaching practice	3.31	0.50	3.14	0.35	2.04	*
4	Recruitment of qualified lecturers into pre-service agricultural teacher education training programmes	3.37	0.57	3.23	0.53	1.16	**
5	Meticulous evaluation of students of agricultural education devoid of Examination malpractice	3.45	0.59	3.28	0.71	1.13	**
6	Introduction of post teaching practice courses into pre-service Agricultural teacher training programmes	2.38	0.61	3.38	0.49	0.00	**
7	Admission of qualified entrants into agricultural education programmes	3.38	0.55	3.19	0.74	1.18	**
8	Increase of pass mark grades from 40% to 60%	3.38	0.58	3.42	0.58	-0.30	**
9	Provision of instructional material allowance to student teachers of agriculture on pre-service training	3.39	0.62	3.04	0.58	2.19	**
10	Motivation of agricultural student teachers through of bursary award	3.38	0.60	3.14	0.65	1.71	**
11	Prompt upgrading of in-service teachers of agriculture at all levels to their new status after completion of their studies	3.41	0.59	3.23	0.53	1.80	**
12	Involvement of permanent teachers of Agricultural Science in the supervision and monitoring of students on teaching Practice	3.27	0.66	3.23	0.43	0.44	**
13	Deployment of only lecturers with professional teaching qualification in supervising student teachers on teaching practice	3.22	0.59	3.09	0.65	1.76	**
14	Organization seminars and workshop at frequent intervals to develop student teachers of agriculture in communication skills for fluency.	3.99	0.57	3.33	0.65	0.42	**
15	Exposing trainee teachers of agriculture to computer literacy programmes	3.38	0.62	3.42	0.50	-0.40	**
16	Exposure of trainee teachers of Agriculture to practical skills acquisition activities	3.38	0.69	3.57	0.59	-2.90	**

**Table 1 continue.....**

17	Exposing pre-service trainees to adequate duration of teaching practice	3.27	0.68	3.47	0.51	-2.00	**
18	Mandating practicing teacher trainees to use instructional material in every instructional delivery	3.33	0.65	3.00	0.70	-2.20	**
19	Strengthening accreditation practices for the establishment of agricultural teacher preparation programmes	3.38	0.60	3.14	0.65	1.71	**
20	Enforcement of all legislations pertaining to examination malpractices in agricultural teacher preparation programmes	3.25	0.66	3.33	0.65	-0.57	**

Note:  $\bar{X}_1$  = Mean opinion score University education lecturers respondents;  $SD_1$  = Standard deviation value of University education lecturers respondents;  $n_1 = 204$ ,  $\bar{X}_2$  = Mean opinion score of College of Education lecturers respondents;  $SD_2$  = Standard deviation value of College of Education lecturers respondents;  $n_2 = 26$ ;  $df = 228$ ,  $t\text{-tab.} = 1.960$ ; \*\* Non-Significant; \* Significant

Item 3 recorded calculated t-value of 2.04. This was greater than table-t value of 1.960. The hypothesis was rejected in respect of the item. This implied that respondents differed in their opinions on effective supervision of teaching practice exercise through adequate monitoring of agricultural student teachers at all stages of lesson preparation, delivery and post teaching discussion.

### 3.2 Hypothesis Two

There is no significant difference in the mean ratings of respondents on the extent to which educational practices for optimization of pre-service training of quality agricultural teachers are employed by teacher training institutions in Nigeria.

Table 2 presents results on the extent to which educational practices for optimization of pre-service training of quality agricultural teachers are employed by teacher training institutions in Nigeria. The result revealed that all the items recorded calculated t-values which were less than the critical t-value of 1.960 at 0.05 levels of significance and 228 degree of freedom. The null hypothesis was therefore accepted. Respondents were in harmony in their opinions regarding the extent to which educational practices for optimization of pre-service training of quality agricultural teachers are employed by teacher training institutions in Nigeria.

**Table 2. t-test analysis of respondents' opinions on the extent to which educational practices for optimization of pre-service training of quality agricultural teachers are employed by teacher training institutions in Nigeria**

S/n	Educational Practices	$\bar{X}_1$	$SD_1$	$\bar{X}_2$	$SD_2$	t-cal	Rmk
1	Increasing years of teacher training programme to five years for degree and four years for NCE	3.58	0.89	3.77	0.79	1.80	**
2	Establishing well monitored supervisory team to ensure service delivery to the agricultural student teachers	3.47	0.53	3.38	0.49	0.79	**
3	Effective supervision and monitoring of teaching practice	3.31	0.50	3.14	0.35	1.04	**

**Table 2 continue .....**

4	Recruitment of qualified lecturers into pre-service agricultural teacher education training programmes	3.37	0.57	3.23	0.53	1.16	**
5	Meticulous evaluation of students of agricultural education devoid of Examination malpractice	3.31	0.40	3.14	0.25	1.01	**
6	Introduction of post teaching practice courses into pre-service Agricultural teacher training programmes	3.31	0.50	3.14	0.35	1.04	**
7	Admission of qualified entrants into agricultural education programmes	3.58	0.89	3.77	0.79	2.90	**
8	Increase of pass mark grades from 40% to 60%	3.38	0.58	3.42	0.58	1.30	**
9	Provision of instructional material allowance to student teachers of agriculture on pre-service training	3.31	0.50	3.14	0.35	2.04	**
10	Motivation of agricultural student teachers through of bursary award	3.38	0.60	3.14	0.65	1.71	**
11	Prompt upgrading of in-service teachers of agriculture at all levels to their new status after completion of their studies	3.31	0.50	3.14	0.35	1.04	**
12	Involvement of permanent teachers of Agricultural Science in the supervision and monitoring of students on teaching Practice	3.27	0.66	3.23	0.43	0.44	**
13	Deployment of only lecturers with professional teaching qualification in supervising student teachers on teaching practice	3.31	0.40	3.14	0.25	1.01	**
14	Organization seminars and workshop at frequent intervals to develop student teachers of agriculture in communication skills for fluency.	3.31	0.50	3.14	0.35	1.24	**
15	Exposing trainee teachers of agriculture to computer literacy programmes	3.58	0.89	3.77	0.79	1.90	**
16	Exposure of trainee teachers of Agriculture to practical skills acquisition activities	3.58	0.89	3.77	0.79	1.90	**
17	Exposing pre-service trainees to adequate duration of teaching practice	3.31	0.50	3.14	0.35	1.04	**
18	Mandating practicing teacher trainees to use instructional material in every instructional delivery	3.33	0.65	3.00	0.70	-2.20	**
19	Strengthening accreditation practices for the establishment of agricultural teacher training programmes	3.31	0.40	3.14	0.25	1.01	**
20	Enforcement of all legislations pertaining to examination malpractices in agricultural teacher preparation programmes	3.31	0.50	3.14	0.35	1.04	**

\*\* Non- Significant; \* Significant

### **3.3 Discussion of Findings**

The findings of this study were discussed based on the objectives of the study as follows:

#### **3.3.1 Educational practices that could optimize pre-service training of quality agricultural teacher training in Nigeria**

The opinions of respondents on this aspect of the study revealed that the educational practices for optimization of pre-service training of quality agricultural teachers in Nigeria should include admission of quality entrants into agricultural teacher training programmes, establishment of well monitored supervisory team to assure service delivery to the agricultural student teachers, recruitment of high trainable individuals into agricultural teacher education preparatory programmes, increasing the pass mark grade and number of years for degree and Nigeria Certificate in Education (NCE) training programmes, provision of instructional material allowance and bursary award to pre-service teachers trainees. Others were initiating programmes at frequent intervals to develop skills in student teachers for fluency in English Language and use of computers in teaching agricultural student teachers, among others. The finding was in line with the view of Ijaiya [26] who pointed out that for quality to be achieved in agricultural teaching profession, motivated through bursary awards, payment of allowances should start at training level. [9] in a related study confirmed the finding of this study when they pointed out the need to de-emphasize paper qualification but placing emphasis on the three major success factors in total quality optimization in teacher training which include quality product (teachers), Cost and Time. Similarly, [11] found out from their empirical study that in addition to maintaining quality assurance in 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. [8] 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 [19] which stressed on the integration of Information and communication Technology (ICT) literacy programme into pre-service teacher training curriculum as a strategy for its optimization. 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 knowledge society.

#### **3.3.2 Extent to which educational practices for optimization of pre-service training of quality agricultural teachers are employed by teacher training institutions in Nigeria**

The findings in this aspect of the study indicated that the employment of educational practices for optimization of pre-service training of quality agricultural teachers was generally low. By implication, most of the educational practices were not employed in pre-service agricultural teacher training programmes in Nigeria. The admission of quality entrants into agricultural education programmes with required qualifications was not applied in Nigerian universities and colleges of education. This agreed with [27] who stated that the quality of input into a training programme will determine the output and what is sowed is what is harvested. According to him, admission of good quality candidates into agricultural teacher training institutions will result to good quality teachers. For him, the current minimum qualification of three credit level passes at the school certificate level required of entrants into NCE programmes in College of Education does not guarantee good quality entrants. [6];

[28] are in support of the above view. They pointed out that NCE qualification has assumed a new dimension given that it is the minimum teaching qualification. [29] findings in his study also confirmed that many agricultural teacher training institutions admit low quality candidates into their programmes. Pointing out the adverse effect of this, he said that the lecturers are not finding it easy coping with the quality of the student teachers under their care. He maintained that most students involve themselves in examination malpractice and are capable of passing Senior Secondary School Examination with credit level pass in all the subjects without acquiring the actual knowledge. These students are pushed into Colleges of Education and Universities. This adversely affects their performance as most of them are inherently weak academically and may never be transformed or performs creditably even in the best academic environment.

As pointed out by [14], the Nigerian National Policy of Education which emphasized the importance of quality teacher was developed in 2007 and had its overall goal stated as follows "In recognition of the pivotal role of quality teachers in the provision of quality education at all levels, teacher education shall continue to be emphasized in all educational planning and development." The policy was meant to re-orientate and restructure teacher education. To achieve the policy, statements were developed around the key education challenges covering admission and graduation requirements, curriculum and instruction and quality assurance issues, clinical practice, induction, certification and licensing and quality of teacher educators. One must note that there is yet to be a comprehensive strategy for effective translation and implementation of these policy statements [14]. The finding in this aspect of the study confirmed this doubt.

#### **4. CONCLUSION**

Based on the findings made, it was concluded that educational practices such as establishment of well monitored supervisory service for effective supervision of teaching practice and post teaching discussion, strengthening of accreditation practices for the establishment of agricultural teacher preparatory programmes, among others have potentials of optimizing effective agricultural teacher training. However, most of these practices if not all of them are not considered in the pre-service training of agricultural teachers in Nigerian colleges of education and universities offering agricultural education programmes. The adverse consequence is ultimately, the production of agricultural teachers of low quality, deficient in knowledge of the subject matter, spirit of enquiry, creativity and ability to carry out teaching functions.

#### **COMPETING INTERESTS**

Authors have declared that no competing interests exist.

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