Perception of Secondary School Administrators towards the Availability of Resources for Practical Agriculture in Federal Capital Territory (FCT) Nigeria

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Abstract

This study examined the perception of Secondary School Administrators towards the availability of resources for the smooth activities during teaching and learning of practical agriculture in Federal Capital Territory (FCT), Nigeria. Two research questions and a hypothesis were formulated to guide the study. A descriptive survey research design was used for the study, the sample size was twenty six secondary school administrators comprising of 14 males and 12 females from twenty six secondary schools. The instrument used for data collection was a modified four point response Likert scale questionnaire that was face validated by three experts. Kuder Richardson method was used to test for the reliability. Descriptive statistical techniques were used to analyze the research questions and t-test at 0.05 level of significance was used to test the hypothesis. Findings revealed that the administrators' sex did not influence their perception in relation to the availability of resources required for the smooth activities for practical agriculture. The sex of the administrator also had no significant effect on their perception regarding the frequency of the release of fund for effective teaching and learning of practical agriculture. It is recommended that the school farm should be primarily for the teaching of practical agriculture to the students and not for punishment. So also, resources should be provided primarily by the government and funds can also be sourced from private sectors, non-governmental organizations, school internally generated revenue, alumni, Parents Teachers Association (PTA) and other sundry sources.

Keywords: Perception, Secondary School, Administrator, Practical Agriculture, Resources

Introduction

The availability of resources for the smooth activities during teaching and learning of practical agriculture to engender the educational and economic development of Nigeria cannot be over emphasized. Practical Agriculture is seen as the fundamental principle of returning man to the farm. It remains a vital component and constituent of the study of agriculture, it has always been well argued that, the direct impact of the practical aspect of agricultural science have on the subject is un-measurable, little wonder even the West African Examination Council (WAEC) a major examination body in the West African sub-major and the National Examination Council (NECO) syllabi strictly indicates that, the practical aspect must constitute the basics of teaching the subject.

More so, that Agricultural Science is one of the subjects in Junior and Senior Secondary Schools; and as a vocational subject, it cannot be taught effectively without actively engaging the students in practical activities. Learning by doing is emphasized in the curriculum so that the students should be able to produce food and other agricultural products for themselves and their community. A series of activities are suggested in the curriculum to ensure the development of psychomotor skills in agricultural science by the students. The programme further recommends that: each student is guaranteed adequate equipment, farm space, farm structures and regular supply of fertilizers and animal feeds. In addition to having a farm, each school should keep at least two farm animals. Students' achievement should be continuously assessed through various forms of tests and during field and laboratory practical and individual assessment should be carried out for activities in crop production while group assessment is restricted to performance in animal production activities.

The agricultural sector was once the major backbone of the Nigerian economy accounting for more than half of the Gross Domestic Product (GDP) in the 1960s, Izuchukwu (2011). A steady decline in the revenue accruable from agriculture was however noticed with the emergence of the oil boom era in the 1970s. Since then, educational and economic experts have been devoting a lot of attention to how best to bring agriculture back to its lost enviable position. This led to the formulation of various policies. One of these policies from the educational standpoint is the inclusion of Agriculture as a pre-vocational subject at the primary and junior secondary schools and as a vocational subject in the senior secondary school level, FRN (2004). Also, Agricultural

Science acquired the status of a vocational subject and it is one of the elective subjects students can choose at senior secondary school levels. This is to enable interested students to acquire practical agricultural skills that would make them self-reliant in future. Moreover, this would boost Nigeria's food productivity.

Many of the school administrators in secondary schools in Federal Capital Territory (FCT) have very lukewarm attitudes over the provision of needed farm tools, equipment, and farm inputs required for effective practical agricultural science in secondary schools. This non-challant attitude tends to retard genuine efforts of some teachers of agricultural science in the secondary schools. In spite of the emphasis being placed on agricultural science as one of the subjects in secondary schools, there is usually not enough time provided in the time-table for a meaningful agricultural science work Adeyemi (2006). Agricultural science teachers are always interested to finish the syllabus before the external examination – Senior School Certificate Examination (SSCE) conducted by West African Examination Council (WAEC) and National Examination Council (NECO).

Hence, the prosecution of a functional education in relation to agricultural practical in secondary schools still leaves much to be desired. In view of these difficulties, most teachers of agricultural science still resort to the theoretical method of teaching the subject. This undoubtedly, is contrary to the improvement of agricultural science education, which is greatly needed at this period of our development with emphasis on practical oriented learning, Mammudu (1996).

The teaching and learning of practical agriculture in developing country like Nigeria has been posed with numerous shortfalls which include; inadequate facilities, inadequate use of instructional materials, inadequate funding, inadequate farm land among others, Amuah (2009). An in-depth look at the secondary schools agricultural science programmes revealed that there is the need for improving all phases of agricultural science especially the secondary school teaching resources on practical agriculture which induces and support the teaching and learning processes that lead to improvement on-the-job performance through affecting changes in the knowledge, attitudes, skills and practices of the learners. It is against this background that this paper examined the perception of secondary school Administrators towards the availability of Resources for the smooth activities during teaching and learning of practical agriculture in Federal Capital Territory (FCT), Nigeria

Research Area

The Federal Capital Territory (FCT) is located in the geographical center of Nigeria. It has a land area of 8,000 square kilometers. It is bounded on the north by Kaduna State, the west by Niger State, the east and southeast by Nasarawa State and the southwest by Kogi State. It falls within latitudes 70 20′ North of the Equator and longitudes 60 45′ and 70 39′. The FCT's natural endowments such as; its rolling hills, isolated highlands and other endearing features make it a delight. The savannah grassland of the North and the Middle Belt, the richness of the tropical rain forests of the south and an equable climate all combined to make the FCT a soil-rich agricultural haven.

This paper investigated the perception of secondary school administrators towards the availability of resources for the smooth activities during teaching and learning of practical agriculture in Federal Capital Territory (FCT), Nigeria. The paper covered all secondary schools in the six area councils of the Federal Capital Territory which included: Abaji, Abuja Municipal, Bwari, Gwagwalada, Kuje and Kwali. All the principals of junior and senior secondary schools in Federal Capital Territory, Nigeria formed the population of the study.

Research Objectives

This study investigated the perception of secondary school administrators towards the availability of resources for the smooth activities during teaching and learning of practical agriculture in Federal Capital Territory (FCT), Nigeria.Specifically, the study:

1. determined how the availability of resources by the administrators in FCT affects the smooth activities for practical agriculture;
2. determined how often funds were released and relevance to effective practical agriculture activities as noted by the administrators in FCT;

Research Questions

1. How does the availability of resources by the administrators in FCT affect the smooth activities for practical agriculture in schools?

2. How often are funds released for effective practical agriculture activities as noted by the administrators in FCT schools?

Hypothesis

Ho: There is no significant difference in the mean responses of male and female secondary school administrators on the availability of resources required for practical agriculture in FCT secondary schools?

Literature Review

Agricultural science curriculum in secondary school is practical oriented, aimed at suitable skill acquisition for a successful transition to the world of work in agri-business endeavours. But the emphasis of integrating productive work into the educational programme could fail if farm resources were not available in the schools to actualize the vocational ends to which agriculture curriculum in secondary schools are aimed at Emeya and Ojimba (2012). School facilities and equipment are assets to a learner and it determines how and what the student should learn, Ekanem (2005) in Mamman-Lafia (2016). Olaitan and Mama (2002) mentioned that lack of and inadequate school farmland and the farm structures in the school environment affect directly the teaching and learning of practical agriculture in secondary school level.

In transforming agricultural science curriculum into practical and or vocational parlance, various teaching aids, specimen, crop and animal species constitute the major facilities at the disposal of the teacher and students of agriculture , Akpan, (2008). The best way to learn agricultural science is to live in a learning environment where learners are surrounded by all the learning materials of which he / she can access readily for learning purposes, Nsa, Offiong, Udo and Ikot (2014). Abimbade (1999) in Mamman-Lafia (2016) attest that instructional materials when appropriately used enhance learning, improve the competence of teachers and make learning more meaningful to learners. Jatau (2008) report that when instructional equipment are appropriately utilized, they bring about more effectiveness in teaching and learning process, but this depends on teachers‘ ability to use them efficiently.

Practical agriculture cannot be properly taught without adequate facilities and equipment, such as improved seeds, storage facilities, tractors, farm implement, farm tools, modern laboratories, farmlands, livestock etc. Eze and Uzoka (2011).Osuala (2004) points out that inadequate facility hamper the students' learning in cognitive, affective and psychomotor domain. School facilities are the materials resources that facilitate effective teaching and learning in schools. Jaiyeoba and Atanda (2003) in Mamman-Lafia (2016) posit that they are things which enable a skillful teacher to achieve a level of instructional effectiveness that exceeds what is possible when they are not provided.

The importance of practical agriculture for skill acquisition with the provision of adequate instructional resources for education cannot be over-emphasized, Owoeye and Yara (2011). According to Oni (1992), resources constitute a strategic factor in organizational functioning. Their availability, adequacyand relevance influence efficiency and high productivity. Owoeye and Yara (2011) further opined that absence or poor quality of educational facilities can affect academic performance. According to Hallak (1990) facilities form one of the potent factors that contribute to academic achievement in the school system. One of such facilities that are vital to any school running agricultural science programme is the school farm.

The objectives of the school farm in vocational agriculture curriculum implementation, the teachers and students should appreciate the importance of the school farm in translating theory in the classroom into practice. In view of this, Akubuilo (1999) in Mamman-Lafia (2016) report that school farms should be divided into plots, for each student to own a plot and grow crops assigned to him/her by the teacher while some may rear simple livestock. Emeya and Ojimba (2012). As a pre-condition for successful implementation of Agricultural science curriculum in secondary schools, West African Examination Council (2006) reported that each school was expected to have adequate equipment and facilities, farm structure; regular supply of inputs coupled with farm spaces, at least two farm animals to be managed by students. Jemba (2010), posited that the teaching of practical agriculture has degenerated into a theoretical exercise with emphasis continuing to be placed on academic performance, because schools have inadequate funds to provide all the necessary materials for practical work.

Statistics from CBN (2010) in Mamman- Lafia (2016) revealed that between 2000 and 2010, allocation to the education sector by Federal Government in Nigeria was not more than 14% of the annual budget, which was even low when compared to allocation of countries such as; Kenya, Malawi, Botswana, Angola, Sierra Leone, South Africa, all in sub-Saharan Africa, United Nations Development Programme (2011). Unfortunately, complaints of inadequate fund for the development of secondary education in Nigeria abound in literature, Omoregie, (2005), Jaiyeoba, and Atanda, (2003), Moja (2000) and Federal Ministry of Education (2003), which is attributed to lack of / inadequate as well as decay infrastructural facilities in secondary school Omoregie, (2005).

According to the National Curriculum of Agriculture, FRN (2007) enumerated the following as the specific objectives of introducing agricultural science at the secondary school:

i. To stimulate and sustain students interest in agriculture

ii. To provide students the interest to progressively advance in farming.

iii. To advance food production through improvement of agricultural production techniques in students.

iv. To provide occupational entry level skills in agriculture to the interested students.

v. To prepare students adequately for producing and marketing farm commodities efficiently and profitably.

vi. To enable students acquire basic knowledge and practical skills required for future studies in agricultural field.

Research Methods and Procedures

The instrument used for collecting data for the research was a structured questionnaire. The questionnaire items were derived from the objectives of the study as well as the literature. They were in three parts: Part A obtained information on personal data of respondents; while part B sought information on the availability of resources required by the administrators for the smooth activities for practical agriculture and Part C sought information on how often funds were released for effective teaching and learning of practical agriculture.

Twenty – six (26) copies of the questionnaire were personally administered to the respondents (Secondary School Principals) from the two (2) area councils of the study in the Federal Capital Territory, (FCT). The Secondary Schools selected were visited and respondents were given a copy of the instruction and a questionnaire. The questionnaire copies were later retrieved for analysis.

Method of Data Analysis

In calculating the personal characteristics for the 26 respondents, descriptive statistical techniques and simple percentages were used and t-test at 0.05 level of significance was used to test the hypotheses. For each research questions, the responses relating to it were totaled, the total weighted frequencies were used to determine the mean and standard deviation score for each items.

The cut-off point was determined by finding the mean of the nominal values assigned to the options using the formula:

$$\bar{X} = \frac{\Sigma X}{N}$$

Σ = Summation

X = Nominal values of options

$\bar{X}$ = Mean

N = Numbers of items

To determine the cut-off point on the criterion level, the following measure was undertaken

Table 1: Determining the cut-off point

	Scaling statement		**Values**
	Strongly Agree	SA	4
	Agree	A	3
	Disagree	D	2
	Strongly Disagree	SD	1

From the above table

$$N = 4$$

$$\bar{X} = \frac{10}{4} \qquad \bar{X} = 2.5$$

The cut-off point was fixed at 2.5

Analysis of Data and interpretation

In this part of the survey instrument the participants were asked to indicate their level of satisfaction with each of the 33 items using the four Likert Scale ranging from strongly agree to strongly disagree as follows: 4=Strongly Agree, 3=Agree, 2= Disagree, 1= Strongly disagree. In the following sections, the researcher presents the participant responses to those items in relation to the two key research questions.

Research Question 1

Table 2: What is the level of available resources required by the administrators in FCT schools for the smooth activities for practical agriculture?

S/N	Availability of resources required by the administrators for the smooth activities for practical agriculture	$\bar{X}$	SD	Remarks
1.	School farm land is available for practical agriculture	2.65	33.08	Agree
2.	Laboratory / laboratory materials and equipment: such as soil and rock samples, pH meter, beaker, crucible etc. are available for practical agriculture activities	3.04	37.89	Agree
3.	Farm machines and implements such as tractors, plough, ridgers, harrows, planters etc. are available for practical agriculture.	2.31	28.74	Disagree
4.	Adequate funds are available for practical agriculture	2.08	25.84	Disagree

	activities.			
5.	Adequate farm inputs such as seeds, seedlings, fertilizers are available for practical agriculture	2.65	33.08	Agree

Cut-off point: 2.5 and above = Agreed, less than 2.5= Disagreed

Source: Field survey, 2017.

Table 2 clearly showed that all the Secondary school administrators agreed with all the items that there were availability of resources required by the administrators in FCT for the smooth activities for practical agriculture except with item 3 and 4 disagreed that farm machines, implement and adequate funds are available for the smooth activities of practical agriculture in secondary schools in FCT.

Research Question 2

Table 3: How often are funds released for effective teaching and learning of practical agriculture as noted by the administrators in FCT schools?

S/N	**How often are funds released for effective teaching and learning of practical agriculture?**	$\bar{X}$	**SD**	**Remarks**
6.	Funds for agricultural science practical lessons are released termly.	1.96	24.39	Disagree
7.	Funds for agricultural science practical lessons are released every session.	3.15	39.35	Agree
8.	There is a regular source of fund for Agricultural science practical	2.07	25.84	Disagree
9.	Funds for agricultural science practical lessons are released monthly.	1.73	21.98	Disagree

Cut-off point: 2.5 and above = Agreed, less than 2.5= Disagreed

Source: Field survey, 2017.

Descriptive statistics were calculated and they indicated that all secondary schools administrators disagreed with all the items in Table 3, which identified the how often funds are released for effective teaching and learning of practical agriculture as noted by the administrators in FCT, except for item 7 which agreed with the identified frequency of how funds were released for effective teaching and learning of practical agriculture as noted by the secondary school administrators in FCT.

Research Hypothesis

Ho: There is no significant difference in the mean responses of male and female secondary school administrators on the available resources required for practical agriculture in FCT.

Table 4: t-test showing the differences on the availability of resources required by the school administrators for the smooth activities for practical agriculture.

Sex	**Frequency**	**Mean of Sec. Sch.Administrator $\bar{X}$**	**S.D**	**t-critical**	**t-cal**	**Decision**
Male	14	0.54	2.69	1.692	0.03	Accept Ho
Female	12	0.46	2.31			

t- cal = 0.03< t critical=1.692, p value = 0.05, df = 26

Source: Field survey, 2017.

The null hypothesis for the variables on table 4 was tested at 0.05 level of significance and 26 degree of freedom. The t- calculated for the two variables i.e. male and female secondary school administrators were less than the critical value and this indicated that there is no significant difference in the mean rating of the two variables. Therefore, the null hypothesis was accepted.

Implications of the Study and discussion of findings

The findings of this study, with respect to teachers of agricultural science and school administrators, the study would raise their awareness to invest resources in practical agriculture as an asset for agriculture curriculum implementation, as well as a veritable alternative source of income that can be derived from the school farm and image maker for their school. It would also be helpful to secondary school administrators whose duty are to raise the standards of the practical agriculture and modification of facilities and programme to improve the existing situations in their schools.

The study would also be useful in educational policy making. The research would arouse instructional education funding agencies such as Federal Ministry of Education, State Ministries of Education, National Teachers' Institutes as well as professional bodies such as Science Teachers Association of Nigeria (STAN) to formulate educational polices which may be useful in implementation of agricultural science curriculum.

The society would also benefit from the findings of this study because when students graduate with expected practical entrepreneurial skills, they would reduce the problem of quack practical agricultural practitioners thereby offering good and efficient services to the society. This would go a long way in achieving the much needed practical agricultural development in Nigeria. To a large extent, the study would provide some framework for developing entrepreneurial skills in agriculture through the effective utilization of farm tools, farm implement, farm machines and other farm inputs or materials necessary for the production and processing of food.

Finally, the result of this study would provide the much needed threshold to improve the standard presently in secondary school practical agriculture, it would adequately meet to the need of being self-sufficient in food production as a nation, improve the lively hood of Nigerians, job creation for our teeming population and further meet the Sustainable Development Goals (SDGs) of the United Nations Development Programme (UNDP).

The most important findings of this study with regard to the two key research questions are as follows: In the first research question which determined how the availability of resources

required by the administrators in FCT affects the smooth activities for practical agriculture; the study revealed that three out of the five items were agreed with in this section, and the remaining two were disagreed which revealed that farm machines and implement are not available and funds are inadequate for the smooth activities of practical agriculture in secondary schools in FCT. This is in line with West African Examination Council (2006) that farm tools and equipment, tractors and animal drawn implement, surveying equipment and so on are expected in schools. The findings also agree with Jemba (2010) that the teaching of practical agriculture has degenerated into a theoretical exercise with emphasis continuing to be placed on academic performance, because schools have inadequate funds to provide all the necessary materials for practical work.

In the second research question, the study revealed that one out of the four items were agreed with in this section, and the remaining three were disagreed with, revealing that fund for Agricultural Science activities are not released within short time intervals. This finding is in line to a study by Jemba (2010) who posited that inadequate funds lead to inadequate facilities and instructional materials which prevent the demonstration of relevant agricultural science practical skills to students. This also agreed with Sekamba (1997) who said that the approach to the teaching of agricultural science has failed to make an impression in the society because it lacked the practical aspect due to low funding which prevented schools from providing all the necessary materials for practical agriculture. Omaren (1992) observed that efficient organization of agricultural science curriculum in Schools requires funding, which should be adequate and timely, because timely release of funds affects the frequency of demonstration of practical skills to students. In a similar study Osam (2013) affirmed that government budgetary allocations to educational Institutions constitute a major source of funds, but are not effective enough for the implementation of vocational and technical curriculum in general and agricultural science curriculum in particular in Secondary Schools.

Likewise the result in table 4 proved that there is no significant difference in the mean responses of male and female secondary school administrators on the available resources required for practical agriculture in FCT. The null hypothesis for the variables on table 4 indicates that there is no significant difference in the mean rating of the two variables. The null hypothesis for the

variables on table 4 was tested at 0.05 level of significance and 26 degree of freedom. The t-calculated for the two variables are less than the critical value and this indicates that there is no significant difference in the mean rating of the two variables. Therefore, the null hypothesis was accepted. According to Oni (1992), resources constitute a strategic factor in organizational functioning. Their availability, adequacy and relevance, influence efficiency and high productivity. Owoeye and Yara (2011) further opined that absence or poor quality of educational facilities can affect students' academic performance. This suggests that the administrators' sex do not influence the availability of resources required for the smooth activities for practical agriculture.

Conclusion

Based on the findings from the study, the following conclusions were drawn:

1. The teaching and learning of practical agriculture should be provided with adequate resources and the usage of relevant instructional materials; it would help to eradicate "pseudo- teaching" and would also help to re-address the pre-formed basis mindset that must have been in the heart of young learners.

2. There should be better funding of agricultural science curriculum. This will enable schools to establish learning facilities and acquire equipment and other instructional materials for the practical teaching of the subject. Schools should start viable agricultural projects such as, poultry farms; school farms for growing crops which can generate funds and such funds can be re-invested in agriculture and also used to buy more instructional materials in agricultural science.
3. Secondary School administrators should allocate funds to agricultural science departments in their budgets for efficient implementation of agricultural science curriculum in the schools.

Recommendations

Based on the results of the analysis, the following recommendations were made:

1. Funds should be adequately provided for practical agriculture, this will lead to adequate facilities and instructional materials relevant for the acquisition of agricultural science practical skills by the students.

2. Funds to be released for practical agriculture should be adequate and timely, so as to improve and increase the frequency of student's demonstration of practical agriculture skills.

3. The resources for effective running of the school farms and other instructional materials needed in the teaching and learning of practical agriculture should be provided primarily by the government and funds can also be sourced from private sector, non-governmental organizations, school internal revenue, alumni, Parents Teachers Association (PTA) and sundry sources.

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