

INFLUENCE OF AGRICULTURAL SCIENCE PRACTICAL ON POVERTY ALLEVIATION AMONG SENIOR SECONDARY SCHOOL STUDENTS FOR SUSTAINABLE DEVELOPMENT IN KOGI STATE

By

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Abstract

The study examined the influence of Agricultural Science practical on poverty alleviation among senior secondary school students for sustainable development in Kogi State. The specific objectives of the study were to assess the availability of school farm for carrying out agricultural science practical for senior secondary school students in Idah LGA, Kogi State, how often agricultural science practical are conducted in senior secondary schools in Idah and how agricultural science practical can influence poverty alleviation among senior secondary school students in Idah LGA, Kogi State. The study adopted descriptive survey design. The population for the study comprised all the senior secondary school students (SSS 2) offering agricultural science as a subject in all the government secondary schools in Idah Local Government Area. A sample of 122 students was randomly selected from the population. Questionnaire was employed as an instrument of data collection. The study found that each school farm has a laboratory for carrying out experiments for agricultural science practical, but, agricultural science practical is taught theoretically. It was discovered that, agricultural science practical is not conducted frequently among senior secondary school students. The study concluded that, agricultural science students possessed the necessary skills and knowledge to help alleviate poverty. It was recommended, among others, that incentives should be given to agricultural science teachers to enable them carry out practical regularly, every agricultural science subject period should be followed up by a practical class, school farms should always be supervised by the principals of schools to ensure it is in a proper state, agricultural science project day should be organized to showcase students' produce from the farm to parents and the community.

Keywords: Agricultural science, sustainable development, poverty alleviation, agricultural practical.

Introduction

Agriculture is an age long activity that has always been of benefit to man. It can be said that man cannot exist without agricultural science. The word, agricultural is taken from the Latin words, “Ager” which means field and “cultural” which means cultivation. In this vein, agricultural science can be defined as the cultivation of plant and rearing of animals for processing and also for marketing of its produce. Agricultural science as opined by Ndem (2013) is the branch of science that is involved in the growing of crop, rearing of domesticated animals for man’s use purposely for providing food, raw materials for industries, income, employment opportunities and shelter. It further includes the science and art of processing, preservation, storage, marketing and distribution of the agricultural produce. Agricultural science is a practical oriented subject because it cannot be carried out successfully without carrying out the practical on the field. Agricultural science practical is aimed at imparting relevant and specialized knowledge, skills and attitude to Agricultural science students. It is a form of training designed to provide teachers with sound academic knowledge and skills as well as ample opportunity to apply this knowledge through classroom activities, laboratory experiments, project participation and supervised Agricultural experience (Osinem, 2008).

Furthermore, Agricultural science practical is normally carried out on the school farm, which is an area of land solely allocated for agricultural activities by a school. The area usually possesses the potentials or characteristics required for agricultural productivity usually within the school premises or a trekking distance from the school. Agricultural science practical is so important in the study of Agriculture because that is where the skills are developed. Students acquire agricultural knowledge in the classroom in several areas like crop production, forestry, soil conservation, livestock management, fish farming, agricultural business and farm management but all these knowledge acquired are put into practice through practical activities carried out in the agricultural laboratory and school farm.

Students put agricultural knowledge into practice in the school farm under the guidance of the teacher who makes use of demonstration, observation and supervised practice methods. As these methods are well implemented, the students will most likely acquire the required skills at the end of the stipulated learning period. It should be noted that, science subjects are taught in two parts; theory and practical. Knowledge in theory cannot make agricultural science students become skilled farmers. The students will have to learn the technical know-how through practical work in the school farm. Most of the time, the students are observed to exhibit

these skills when given commensurate agricultural tasks as a confirmation of acquisition of the skills. The concept of skill acquisition has to do with how to perform an activity that is related to some meaningful exercise, work or job (Ekele, 2015).

In addition, Agricultural science practical stimulates students' interest in farming. It helps to solve or destroy agricultural phobias. For example, a student may be interested in eating fresh fish or eggs but fears going near the fish pond because of it splashing dirty water and sharp fins or going near poultry house because of the offensive odour. Some like to eat fresh maize but fear working in the maize farm because of the irritants in the maize leave. It is through the practical on the school farm and the guidance of the teacher that helps students overcome all these phobias because the students are made to understand that there is no success without one struggling to overcome some of the difficulties which in turn prepares the students to develop interest for agricultural activities.

According to Olaitan and Mama (2001), crops and animals reared during agricultural science practical on the school farm are harvested and sold to the surrounding communities or consumers either through the local community markets or through organized sales on the school farms. Through agricultural science practical, many students learn more about improved ways of carrying out agricultural activities which they usually transfer to their family farms. Through this way many farmers or the students' parents in the community can learn and adopt modern farming technologies which will improve their agricultural productivity. Parents and adult members of the community learn the application of modern technologies in agriculture from the school students. Such technologies in agriculture include improved ways of fertilizers application, acquisition of new varieties of seeds for planting, improved seedlings, timing of farming operations, preservation of harvested crops and animal products, castration of male goats, bulls animal bleeding, fish hatching in hatcheries, tattooing the farm animals, keeping of simple farm account such as cash books and enrolling in farm co-operatives.

The acquisition of manipulative skills in the specific areas of agriculture are in many ways related to the agricultural production practiced outside the school and could help students find satisfaction in agricultural jobs. This is in line with the submission in the National Curriculum of Agriculture (Federal Republic of Nigeria,2014) that stated the following as the specific objectives of introducing agricultural science in secondary schools: to stimulate and sustain the students' interest to progressively advanced farming, to advance food production through improvement of agricultural production techniques in students to provide occupational

entry level skills in agriculture to the interested students, to prepare students adequately for producing and marketing farm commodities efficiently and profitably and to enable students acquire basic knowledge and practical skills required for future studies in agricultural field.

The main goal of Agricultural science is not only to produce professionals and skilled man-power but to enlighten the rural community with the aim of ensuring complete transformation in agricultural production from the subsistence level to mechanized agriculture where there will be sufficient food, shelter, income for the farmer, foreign exchange earnings, raw materials for the industries and employment opportunities for teeming population. Consequently, many of the rural communities will graduate from subsistence agriculture to mechanized-commercial agriculture where the basic knowledge are achieved though the training from Agricultural science practical that are transferred to the rural communities and to their parents' farm. Agricultural education training is carried out with a view to providing a string background to produce efficient farmers, researchers, educators, extension staff, agribusiness professionals, and others needed to achieve sustainable agricultural development (Kidane & Worth, 2012). In this way, poverty will be a thing of the past in Kogi State and Nigeria.

Poverty is the state of having few material possession or little income. It is a condition of deprivation of basic necessities of life which largely referred to shelter, food and clothing. Oviasuyi (2020) viewed poverty as a long and protracted inability to generate productive resources for the purpose of generating desired levels of output in order to enhance the realization of an appreciable income, thereby alleviating poverty becomes sacrosanct. Poverty alleviation refers to all the methods, ways or techniques adopted by government, non-governmental organizations or wealthy individuals to reduce or eradicate poverty. Poverty alleviation aims to improve quality of life for those people currently living in poverty. Most of the poverty alleviation strategies adopted by various agencies in the past were well-focused on rural areas and agricultural sector. These include: Operation Feed the Nation, Green Revolution, and Better Life for Rural Women, Family Economic Advancement Programmes, among others.

All these laudable programmes will not yield the much expected poverty alleviation envisaged. The involvement of senior secondary school students on agricultural science practical and the consequent transference of this practical knowledge on their parents and

community farms can lead to alleviation of poverty that could increase sustainable development in this state and Nigeria at large.

Purpose of the Study

The purpose of the study was to ascertain the influence of Agricultural science practical on poverty alleviation among senior secondary school students for sustainable development in Idah LGA of Kogi State Nigeria. Specifically, the study sought to:

1. Find out the availability of school farm for carrying out Agricultural science practical for senior secondary school students in Idah LGA, Kogi State
2. Determine how often Agricultural science practical is conducted in senior secondary schools in Idah
3. Determine how Agricultural science practical can influence poverty alleviation among senior secondary school students in Idah LGA, Kogi State.

Research Questions

1. What is the state of the school farm in terms of availability of carrying out agricultural science practical for senior secondary school students in Idah LGA, Kogi State?
2. How often agricultural science is practical conducted for senior secondary school students in Idah LGA, Kogi State?
3. What are the ways agricultural science practical can influence poverty alleviation among senior secondary school students in Idah LGA, Kogi State?

Methodology

The researcher adopted descriptive survey design. A descriptive research design was used because the study involved collection, presentation and description of data (Keswet, Bash & Kabang, 2015). The population for the study comprised all the Senior Secondary Two (SS2) students offering Agricultural Science as a subject in all the government secondary schools in Idah Local Government Area which has eight (8) approved government secondary schools with a population of 1820. A sample of 122 students was randomly selected from the population. A sample as opined by Nworgu (2015) is a smaller group of elements drawn through a definite procedure from a specified population for inclusion in a study and from which the researcher hopes to gain generalizable knowledge about the whole population. Validation of the instrument for the study was carried out by three (3) experts, one from the Department of

Foundations and two from the Department of Science Education, Prince Abubakar Audu University, Anyigba. Comments and observations from the validators was used to improve the final instruments of the study. The internal consistency reliability co-efficient of 0.86 was obtained using Cronbach Alpha method. The instrument was administered and collected instantly by the researcher from the various respondents. The data for the study was presented in tables which are analysed by the use of percentages. The result from the data collected was used to answer the three (3) research questions.

Results

Research question one: What is the state of the school farm in terms of availability science practical among the senior secondary school students in Idah Local Government Area of Kogi State.

Table 1

Agricultural Science Students' Responses on Availability of School Farm for Agricultural Science Practical

S/N	Items	SA	A	D	SD	N
1.	There is a school farm for agricultural science practical	62 50.8%	60 49.2%	0 0%	0 0%	122 100%
2.	The school farm has a laboratory for carrying out experiments for agricultural science practices	62 50.8%	30 24.6%	20 16.3%	10 8.1%	122 100%
3.	Agricultural science practical are taught theoretically	17 13.9%	20 16.4%	25 20.5%	60 49.2%	122 100%
4.	The school farm is in a bad condition for practical activities	40 32.8%	78 63.9%	4 3.3%	0 0%	122 100%
5.	Agricultural science are better understood during practical	50 41%	69 56.6%	3 2.4%	0 0%	122 100%

Result in Table 1 shows that there is school farm for carrying out agricultural science practical, 50.8% and 49.2% strongly agreed and agreed that the school farm has a laboratory for carrying out experiments for agricultural science practical. Majority (50.8%) of the respondents strongly agreed that agricultural science practical are taught theoretically. Also, the table revealed that, 63.9% of the respondents agreed that the school farm is in a bad condition for practical activities. The table indicated that 56.6% respondents are of the opinion that, agricultural science are better understood during practical. This implied that, the school farm is in a good state for agricultural science practical.

Research question two: How often are agricultural science practical conducted for senior secondary school students in Idah Local Government Area of Kogi State?

Table 2

Frequency of Conducting Agricultural Science Practical

S/N	Items	SA	A	D	SD	N
6.	Agricultural science practical is conducted twice in a week	20 16.4%	30 24.6%	52 42.6%	20 16.4%	122 100%
7.	Agricultural science practical is conducted only during examination	60 49.2%	48 39.3%	10 8.2%	4 3.3%	122 100%
8.	I always attend my agricultural science practical class	50 41%	58 47.5%	14 11.5%	0 0%	122 100%
9.	I am always punctual to agricultural science practical	50 41%	60 49.2%	12 9.8%	0 0%	122 100%

Result in Table 2 shows that, 42.6% of the respondents disagreed that agricultural science practical are conducted twice in a week. It found that, 49.2% respondents are of the opinion that agricultural science practical are conducted only during examination. 47.5% agreed that they attend agricultural science practical classes. Also, it found that 49.2% admitted that they are always punctual to agricultural science practical. This implied that, agricultural science practical is not conducted frequently for senior secondary school students in Idah,

Research question three: What are the ways agricultural science practical influence poverty alleviation among senior secondary school students in Idah Local Government Area of Kogi State?

Table 3

How Agricultural Science Practical influences Poverty Alleviation

S/N	Items	SA	A	D	SD	N
10.	Agricultural Science Practical aids high food production	42 34.4%	70 57.4%	10 8.2%	0 0%	122 100%
11.	Agricultural science Practical help the the students to make money for themselves	60 49.2%	62 50.8%	0 0%	0 0%	122 100%

12.	Sales of the agricultural science practical farm produce help us to pay our school fees	0 0%	0 0%	62 50.8%	60 49.2%	122 100%
13.	Agricultural science Practical helps to make a better living	50 41%	72 59%	0 0%	0 0%	122 100%

Result in Table 3 shows that 57.4% indicated that they do most of the allotted assignment given during agricultural science practical. 50.8% of the respondents agreed that they can handle some of the machines for various operations during agricultural science practical. Also, the table revealed that, 50.8% of the respondents did not agree that, sales of the agricultural science practical farm produce are carried out by them. While 59% agreed that profit and loss account of the farm for each session is calculated and kept by the students. This implies that agricultural science students possessed the necessary skills and knowledge to help alleviate poverty.

Discussion

The analyses of research question 1 indicated that there is a school farm and the school farm has a laboratory for carrying out experiments for agricultural science practical. Most of the agricultural science practical are taught theoretically, even though there is a school farm with a laboratory, the school farms are in a condition conducive for practical activities. It was observed that, teachers are not so enthusiastic about keeping the farm even though agricultural science is better understood by the students through practical activities.

Research question two showed that practical are not always conducted frequently but only during examination periods. It indicated that students always attend practical classes and are always on time, that is, they always come early once it is time for practical, hence it is a variety of activities that stimulates students' interest and encourages quick understanding of the subject matter.

In conclusion, the analysis of Research Question 3 indicated that the students do most of the agricultural science practical allotted to them during farm activities. Also, the students handled the machines for various farm operations. This is in line with one of the objectives of National Curriculum of Agriculture (FRN, 2014) which is to stimulate and sustain students' interest in agriculture in order to provide students the means to progressively learn through

farming and advanced food production. The sales of the agricultural science practical are not carried out by the students which is not so good, the students should be allowed to handle the sales themselves in order to also gain practical experiences on how to sell their farm produce, profit and loss accounts as well as other farm records are kept by the students. The result of this is also in line with NPE (2014) that states that, practical work are indispensable for the acquisition of appropriate skills and the development of mental, physical and social abilities and competence; for an individual to live and contribute to the development of his or her society, lay a sound bias for scientific and reflective thinking, and as such teaching shall be by practical exploratory and experimental methods. These will lead to poverty alleviation and sustainable development in Idah Local Government Area of Kogi State of Nigeria.

Conclusion

The study examined the influence of Agricultural Science practical on poverty alleviation among senior secondary school students for sustainable development in Idah Local Government Area, Kogi State, Nigeria. The study concluded that the school farm is in a good state for agricultural science practical. However, agricultural science practical is not conducted frequently among senior secondary school students in Idah Local Government Area, Kogi State. Therefore, there is need for agricultural science students to possess the necessary skills and knowledge to help alleviate poverty in senior secondary school in Idah Local Government Area, Kogi State.

Recommendations

1. Incentives should be given to agricultural science teachers to enable them carry out practical regularly.
2. School farms should always be supervised by the principals of schools to ensure it is in a proper state.
3. Agricultural science students should be given a project to handle in each term on practical.
4. Agricultural science project day should be organized to showcase students' produce from the farm to parents and the community.
5. Agricultural science students should be allowed to handle sales of their farm produce.

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