IMPACT OF SCHOOL BASED CLUSTER TRAINING ON THE EFFECTIVE TEACHING AND LEARNING OF BASIC SCIENCE AND TECHNOLOGY IN PRIMARY SCHOOLS IN SOUTH-SOUTH NIGERIA

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Abstract
The study was carried out to identify the impacts of school based cluster training in the effective teaching and learning of Basic Science and Technology in Primary Schools in South-South Nigeria. The study adopted descriptive survey research design. The population of the study was 2511 made up of Basic Science and Technology teachers from the 1246 Primary Schools in South-South, Nigeria. 20% of the population of Basic Science and Technology teachers in each state was selected for the research. The sample for the study was drawn using simple random sampling technique. A total sample of 702 was used for the study. The instrument used for collecting data was a questionnaire titled " impacts of schools based cluster training in Basic Science and Technology". The instrument was developed by the researcher and it was validated by five experts. The instrument was tested for reliability using kuder-Richardson (K-20) formula and the reliability index was 0.85. The instrument was administered through the help of six research assistants. The instrument was distributed and collected after two weeks and all were returned representing 100% retrieval rate. The data collected were analyzed using Mean and Standard Deviation for the research questions and pearson product moment correlation coefficient to test the hypothesis. The results show that the school based cluster training introduced where effective teaching and learning were noticed include: production, use and improvisation of teaching and learning materials, teaching and learning of computer concepts and operations; and implementation of continuous assessment among others. It was recommended that Universal Basic Education Commission (UBEC) should ensure that the training of teachers using the school based cluster is made an annual exercise so that all the Basic Science and Technology teachers in Primary Schools in the geo-political zone will all be trained, among other things.

Keywords: School based, Cluster training, Basic Science and Technology.

Introduction

The School Based Teachers Professional Development (SBTPD) is a relatively new teacher development programme. Azunku (2021) noted that the programme is a process whereby teachers are brought together in groups called "clusters" which is their schools to enable them acquire creative abilities in problem-solving, utilization of available resources through guided practices on lesson study, preparation of lesson plans, production of teaching aids, classroom management and other pedagogical skills. The school based cluster model is the brain child of Universal Basic Education Commission (UBEC). The Universal Basic Education Commission School Based Model according to Umeano (2020) is a training strategy that involves continuous training and support of teachers at the school where they teach. The training programme was first introduced as an integral part of 2017/2018 teachers' professional development programme.

The Focus of School Based Teachers Professional Development (SBTPD) according to UBEC (2020) include: Shifting from the cluster schools model to the school based model;

Setting out a standardized approach for teacher professional development to ensure that SBTPD leads to the desired results; the training is results-focused; and ensures that all teachers in the selected schools participate in the training. Thus affording them the opportunity to take the skills and knowledge gained to the classroom. The Commission further stated that the advantages of school based teachers' professional development include: upgrading of facilities and equipment to improve both teacher and learning environment; engendering peer support among teachers in the same school; and to reduce cost.

The need for school based cluster according to Universal Basic Education Commission (2020) aroused to establish the fact that improvement does not only come from formal exposure to classroom lectures. Azunku (2021) stated that within each school, and even between nearby schools (in the same cluster), there is an abundance of talents which teachers may learn from. The author further noted that, in the teaching profession, it must be recognized that no man is an island unto him/herself. According to Umeano (2020), this explains the need for a co-operative approach, one which believes that there is always an idea or technique to be learnt, and that teachers function better if they adopt more co-operative approach to their job. In the opinion of Adigun (2020), it is expected that Head-teachers or Assistant/ Deputy Head-teachers that have undergone the training will ensure improvement of less experienced, new recruited or qualified teachers to perform their professional roles better.

A school-based teacher development/training is an activity /approach designed to help teachers improve on their teaching skills within the school setting. According to Azunku (2021) school-based cluster involves but not limited to the improving internal: supervision, discussion, sharing, team planning, team teaching, peer observation, demonstration, mentoring and counseling among others. According to the author, everyone in the school has something to offer here, and everyone in the school must be ready to learn from one another.

The modalities for implementation according to Universal Basic Education Commission (2020) include: training of teachers for 5 days before the beginning of each term, for three (3) consecutive terms. This means that teachers will receive 15 days training in an academic session. Umeano (2020) noted that supervisors' and School Support Officers (SSO) are to follow up the teachers who are to implement the acquired knowledge and skills in the classroom. Adigun (2020) noted that the SSOs will visit the teachers and carry out lesson observations to identify areas of challenges in implementing the skills acquired so as to provide the required support.

The content focus of the school based cluster in Primary Schools according to Universal Basic Education Commission (2020) include: Literacy (including phonics); Numeracy /Mathematics; Communication skills and English proficiency; Digital Literacy (IT); Emergency response and school safety; Professional conduct and Basic Science and Technology. The teachers are to be equip with problem solving skills in the area of: conducting needs assessment in the schools; conducting effective activity-based teaching and learning; classroom management and organization; teaching and learning materials production, use and improvisation; teaching methods; fundamental computer concepts and operations; curriculum, syllabus, scheme of work, unit and lesson plan; use of continuous assessment; record keeping; and guidance and counseling. This research shall therefore concentrate on the impact of school based cluster in teaching and learning materials production, use and improvisation; fundamental computer concepts and operations; and use of continuous assessment in South-South, Nigeria.

South-South is one of the six geo-political zones in Nigeria. It is made up of six states namely: Akwaibom; Bayelsa; Cross River; Delta; Edo and Rivers. The states in the geo-political zone like every other state in Nigeria benefits from school based cluster training which is sponsored by Universal Basic Education Commission since 2017. As at the year 2022, the programme has been

implemented for the training of basic science teachers at the Junior Secondary Schools in South-South geo-political zone for six years. Till now there is no independent study that has been conducted to determine the impact of the programme in teaching and learning in the classrooms. It is therefore pertinent to determine the impact of the training exercise in the teaching and learning activities of Primary Schools with special reference to Basic Science and Technology. Hence the study.

Purpose of the Study

The purpose of the study is to determine the impacts of school based cluster training in the effective teaching and learning of Basic Science and Technology in Primary Schools in South-South Nigeria. Specifically the study sought to:

1. determine the impacts of schools based cluster training in the production, use and improvisation of teaching and learning materials in Basic Science and Technology in Primary Schools in South-South, Nigeria?
2. determine the impacts of schools based cluster training in the teaching and learning of computer concepts and operations in Basic Science and Technology in Primary Schools in South-South, Nigeria?
3. determine the impacts of school based cluster training in the implementation of continuous assessment in Basic Science and Technology in Primary Schools in South-South, Nigeria?

Research questions

The following research questions guided the study:

1. What are the impacts of school based cluster training in the production, use and improvisation of teaching and learning materials in Basic Science and Technology in Primary Schools in South-South, Nigeria?
2. What are the impacts of school based cluster training in the teaching and learning of computer concepts and operations in Basic Science and Technology in Primary Schools in South-South, Nigeria?
3. What are the impacts of school based cluster training in the implementation of continuous assessment in Basic Science and Technology in Primary Schools in South-South, Nigeria?

Hypothesis 1:

There is no significant relationship between the impact of school based cluster training on the effective teaching and learning of basic science and technology in primary schools in south-south, Nigeria at 0.05 significant level

Method

The study was carried out to identify the impacts of school based cluster training in the effective teaching and learning of Basic Sciences and Technology in Primary Schools in South-South Nigeria. The study adopted descriptive survey research design. The population of the study was 3511 Basic Science and Technology teachers in the 1246 Primary Schools in South-South Geo-political Zone of Nigeria. The population is made up 552 teachers from Akwaibom; 303 teachers from Bayelsa State; 679 teachers from Cross River State; 557 teachers from Delta State; 669 Teachers from Edo State; and 751 teachers from Rivers State;

20% of the total population of Basic Science and Technology teachers in each state was selected as sample for the research. The sample for the study was drawn using simple random sampling technique. A total sample of 702 was used for the study.

The instrument used for collecting data was a questionnaire titled " impacts of schools based cluster training in Basic Science and Technology". The instrument was developed by the researcher and it was validated by five experts. Three of the experts came from the Department of Science Education, University of Benin while the other experts came from the Department of Science Education, University of Port Harcouth. The experts from University of Port Harcout in addition to specializing in measurement and evaluation are also resource persons in school based cluster training. The

questionnaire was given to the experts with the directive that they should amend, cancel or re-write any item that is not good or is not measuring what it is suppose to measure. The result of the modification led to the reduction of the number of items in the questionnaire and the modification of some.

The instrument was tested for reliability using kuder-Richardson (K-20) after a single administration of the instrument to 30 Basic Science and Technology teachers from Primary Schools in Ebonyi State who has participated in the cluster training. After analysis, the reliability coefficient obtained was 0.85 which shows that the instrument was reliable. Teachers from Ebonyi State was used for the pilot testing because the state is in another geopolitical zone and also that Basic Science and Technology teachers in the state has also received training under the school based cluster arrangement for Primary School. Also Ebonyi State share common boundary with Cross River State which is one of the states in the South-South geopolitical zone.

The instrument was administered by the researcher and through the help of six research assistants (one per state). The instrument was distributed and collected after two weeks and all were returned representing 100% retrieval rate. Four response options of Strongly Impacted (SI), Impacted (I), No Impact (NI) and Strongly No Impact (SNI) were posed for the respondents for each item. Each of the item was assigned a value, thus SI=4, I=3, NI=2, and SNI=1. This produced a mean of 2.50.

The data collected were analyzed using Mean, and Standard Deviation Any mean of 2.50 and above was accepted and rejected when below that.

Results

Research Question 1: What are the impacts of school based cluster training in the production, use and improvisation of teaching and learning materials in Basic Science and Technology in Primary Schools in South-South, Nigeria?

Table 1: Mean and Standard Deviation ratings of the respondents on the impacts of school based cluster training in the produsction, use and improvisation of teaching and learning materials in Basic Science and Technology in Primary Schools in South-South, Nigeria?

N= 702

S/N	Items statement	$\bar{x}$	SD	Remarks
1	Teachers understand better the meaning of teaching and learning materials	2.62	0.11	Impacted
2	Teachers understand better the meaning of improvisation of teaching and learning materials	2.55	0.30	Impacted
3	More instructional materials are provided by government	2.59	0.20	Impacted
4	Non-governmental organizations assist schools in the provision of teaching and learning materials	2.61	0.66	Impacted
5	Host communities assist schools in the provision of teaching and learning materials	2.79	0.03	Impacted
6	Students assist teachers in the provision/improvisation of teaching and learning materials	2.61	0.40	Impacted

7	Teachers can source teaching and learning materials with less stress	2.99	1.00	Impacted
8	Students can handle teaching and learning materials without injury	2.71	1.09	Impacted
9	Teacher are committed to the use of teaching and learning materials	3.49	0.01	Impacted
10	Teaching of lessons are easier with the aids of teaching and learning materials	3.55	0.22	Impacted
11	Understanding of lessons are easier with the aids of teaching and learning materials	2.81	0.46	Impacted
12	Schools used as cluster centres are better equipped with scientific materials	2.50	0.12	Impacted
13	Increased students interests in Basic Science	2.64	0.30	Impacted
14	Increased the teachers efficiency and effectiveness in teaching Basic Science	2.57	0.46	Impacted
15	Teachers and students ability to observe laboratory rules	2,76	0.47	Impacted

$\bar{X}$ = Mean, SD = Standard Deviation

The data in table 1 above reveals that the respondents acceptable all the 15 items in research question one as the impacts of school based cluster training in teaching and learning materials production, use and improvisation in Basic Science and Technology in Primary Schools in South-South, Nigeria. In the table all the items had a mean in the range of 2.50-3.55. This shows that each of the mean is above the cut-off point of 2.50 and were all accept.

Research Question 2: What are the impacts of school based cluster training in the teaching and learning of computer concepts and operations in Basic Science and Technology in Primary Schools in South-South, Nigeria?

Table2: Mean and Standard Deviation ratings of respondents on the impacts of school based cluster training in the teaching and learning of computer concepts and operations in Basic Science and Technology in Primary Schools in South-South, Nigeria

S/N	Items statement	$\bar{x}$	SD	Remarks
16	Teachers and students can explain the meaning of computer	2.61	0.45	Impacted
17	Teachers and students can pick input and output devices and say their names	3.33	0.44	Impacted
18	Teachers and students can discuss the functional system of a computer	2.55	0.40	Impacted
19	Teachers and students can state the various ways of applying computer and ICT in everyday life	2.58	0.44	Impacted
20	Teachers and students can demonstrate fundamental computer operations	3.02	0.28	Impacted
21	Teachers and students can explain computer concepts easily	3.17	0.30	Impacted
22	Teachers and students can apply information and communication technologies in teaching and learning	2.99	0.30	Impacted
23	Teachers' uses computer to recover and retrieve lessons earlier taught.	3.29	0.04	Impacted
24	Teachers uses computer to store lessons taught	2.97	0.07	Impacted
25	Teachers' uses computer to manipulate lessons earlier taught	2.82	1.00	Impacted
26	Teachers uses computer to transfer and receive information electronically in a digital form.	3.62	0.09	Impacted

$\bar{X}$ = Mean, SD = Standard Deviation

The data in table 2 above reveals that the respondents acceptable all the 11 items in research question two as the impacts of school based cluster training in the teaching and learning of computer concepts and operations in Basic Science and Technology in Primary Schools in South-South, Nigeria. In the table, all the items had a mean in the range of 2.55-3.62. This shows that each of the mean is above the cut of point of 2.50 and were all needed.

Research Question 3:
What are the impacts of school based cluster training in the implementation of continuous assessment in Basic Science and Technology in Primary Schools in South-South, Nigeria?

Table 3:
Mean and Standard Deviation ratings of the respondents on the impacts of school based cluster training in the implementation of continuous assessment in Basic Science and Technology in Primary Schools in South-South, Nigeria

S/N	Items statement	$\bar{x}$	SD	Remarks
27	Teachers can differentiate between test, measurement, assessment and evaluation	2.66	0.14	Impacted
28	Teachers can explain the concept of continuous assessment	2.63	0.41	Impacted
29	Teachers can list and explain the characteristics of continuous assessment	2.65	0.64	Impacted
30	Teachers can list the merits of continuous assessment	2.83	0.05	Impacted
31	Teachers can list the challenges of continuous assessment	2.65	0.46	Impacted
32	Teachers can explain the meaning of assessment	3.03	1.01	Impacted
33	Teachers can give reasons for using assessment in teaching basic science	2.74	1.15	Impacted
34	Teachers can construct a well-designed essay and objectives test items	3.59	0.20	Impacted
35	Teachers can measure students' achievement using non-cognitive instruments	2.85	0.05	Impacted
36	Teachers can build a table of specification in basic science.	2.51	0.41	Impacted
37	Teachers can list and describe various assessment tools and techniques	2.69	0.43	Impacted
38	Teachers can state the various ways of applying assessment tools and techniques in basic science	2.53	0.49	Impacted
39	Teachers can use rating scale in the assessment of the performance of students in basic science	2,80	0.43	Impacted

$\bar{X}$ = Mean, SD = Standard Deviation

The data in table 3 above reveals that the respondents acceptable all the 13 items in research question three as the impacts of school based cluster training in the implementation of continuous assessment in Basic Science and Technology in Primary Schools in South-South, Nigeria. In the table, all the items had a mean in the range of 2.53-3.59.This shows that each of the mean is above the cut-off point of 2.50 and were all accepted.

Hypothesis 1:
There is no significant relationship between the impact of school based cluster training on the effective teaching and learning of basic science and technology in primary schools in south-south, Nigeria at 0.05 significant level

Table 4: Relationship between the impact of school based cluster training and the effective teaching and learning of basic science and technology in primary schools in south-south, Nigeria

S/N	Variable	N	Mean	SD	R	Significant value
1.	Impact of school based cluster training	351	3.042	0.68		0.010
2.	Effective teaching and learning of basic science and technology	351	3.012	0.71	0.775	

Correlation is significant at the 0.05 level (2-tailed)
(source: Author's field work survey, 2021).

From the result of the analysis carried out as shown in table 4 above, the value of pearson product moment correlation coefficient between the variable " impact of school based cluster training and the effective teaching and learning of basic science and technology " done at alpha level of 0.05 is 0.775, and this value is closer to the figure plus one than zero, indicating that there is a strong positive correlation between the variables. Meaning that the impact of cluster training has positive influence on the teaching and learning of basic science and technology.

Furthermore, the significant value of pearson product moment correlation coefficient between the variable " impact of school based cluster training and the effective teaching and learning of basic science and technology is 0.0101 and this value is less than 0.05 indicating that there is linear relationship between the variables. This means that the more the school based cluster training is improved upon, the more likely the effective teaching and learning of basic science and technology will be enhanced. Inferentially, since p-value = 0.010 <0.05 and it is significant at 95% confidence interval and the value of R is 0.775 indicating strong positive correlation, we reject the null-hypothesis and accept the alternative hypothesis and conclude that; There is significant relationship between the impact of school based cluster training on the effective teaching and learning of basic science and technology in primary schools in south-south, Nigeria.

Findings of the Study

The findings of the study in research question one shows that the respondents accepted the items presented as the impact of school based cluster in production, use and improvisation of teaching and learning materials in Basic Science and Technology in Primary Schools in South-South, Nigeria. The findings include that: teachers understand better the meaning of teaching and learning materials; teachers understand better the meaning of improvisation of teaching and learning materials; more instructional materials are provided by government; Non-governmental organizations assist schools in the provision of teaching and learning materials; host communities assist schools in the provision of teaching and learning materials; students assist teachers in the provision/improvisation of teaching and learning materials; Teachers can source teaching and learning materials with less stress; students can handle teaching and learning materials without injury; teacher are committed to the use of teaching and learning materials; teaching of lessons are easier with the aids of teaching and learning materials; understanding of lessons are easier with the aids of teaching and learning materials; schools used as cluster centres are better equipped with scientific materials; Increased students interests in Basic Science; increased the teachers efficiency and effectiveness in teaching Basic Science; and improve teachers and students ability to observe laboratory rules.

The findings of the study in research question two shows that the respondents

accepted the items presented as the impact of schools based cluster in the teaching and learning of computer concepts and operations in Basic Science and Technology in Primary Schools in South-South, Nigeria. The findings include that teachers and students can: explain the meaning of computer; pick input devices output devices and say their names; discuss the functional system of a computer; state the various ways of applying computer and Information and Communication Technology in everyday life; demonstrate fundamental computer operations; explain computer concepts easily; apply information and communication technologies in teaching and learning; teachers' uses computer to recover and retrieve lessons earlier taught; teachers uses computer to store lessons taught; teachers' uses computer to manipulate lessons earlier taught; and teachers uses computer to transfer and receive information electronically in a digital form.

The findings of the study in research question three shows that the respondents accepted the items presented as the impact of schools based cluster training in the implementation of continuous assessment in Basic Science and Technology in Primary Schools in South-South, Nigeria. The findings include that teachers can: differentiate between test, measurement, assessment and evaluation; explain the concept of continuous assessment; list and explain the characteristics of continuous assessment; list the merits of continuous assessment; list the challenges of continuous assessment; explain the meaning of assessment; give reasons for using assessment in teaching basic science; construct a well-designed essay and objectives test items; measure students' achievement using non-cognitive instruments; build a table of specification in basic science; list and describe various assessment tools and techniques; state the various ways of applying assessment tools and techniques in Basic Science and Technology; and use rating scale in the assessment of the performance of students in Basic Science and Technology.

Conclusion

Based on the findings, the study hereby conclude that school based cluster training has had significant impact in the teaching and learning of Basic Science and Technology in Primary Schools in South-South, Nigeria. It is therefore concluded that Universal Basic Education Commission (UBEC) should ensure the continuity of the school based cluster programme so that all the teachers that have not been trained will benefit from it.

Recommendations

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

1 Universal Basic Education Commission (UBEC) should ensure that the training of teachers using the school based cluster is made an annual exercise so that all the Basic Science and Technology teachers in Primary Schools in the geo-political zone will be trained in no distant time.

2 Other Federal, State and Local Education Boards, Ministries, Agencies and parastatal should make budgetary allocation for the training of teachers with the school based cluster model.

3 Non-governmental organizations should assist in the provision of facilities and fund for teaching Basic Science and Technology in Junior Secondary Schools.

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DEVELOPING PRIMARY SCHOOL PUPILS' ENTREPRENEURIAL SKILL IN AGRICULTURE FOR SUSTAINABLE FOOD PRODUCTION

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Abstract
This study focuses on developing pupils entrepreneurial skills in agriculture for sustainable food production. The paper stresses the need for a functional and proper education of students in the area of agricultural skills with regard to skills development. The study discussed the skills in promoting students' interest in practical agriculture. Major challenges militating against the effective teaching of agriculture as an instructional material required in Nigeria schools were outlined which include: inadequate and incompetence teachers, lack of agricultural facilities in schools, inadequate/lack of farm lands in schools, lack of funds and non-involvement of Non-governmental agencies. Ways of mitigating the challenges through effective provision of education on practical agricultural programme were offered. The conclusion was that there is need for Nigerian schools to be fully equipped with facilities and well trained and knowledgeable agricultural education teachers for knowledge creation and quality learning and performance.

Keywords: Agriculture, schools farm, sustainable development and food production.

Introduction

The rate at which agriculture has developed and its development has affected its sustainability. The means of agricultural packaging and delivering seems to be changing from time to time as a result of innovations in the world. In the same vein, the behavioural attitudes of the users of the farm tools are fast changing. No doubt, the emergence of mechanization has brought about changes in work practices and business operations. In the past twenty years, the operations of many farm cultural organizations have changed due to the achievement recorded in the field. In view of this, educational institutions, primary, secondary and higher learning have imbibed the application of these new technologies in their academic programmes. It is in this perspective that vocational subjects teachers need to adopt these innovative technologies in their course designs and pedagogical approaches to meet the needs of graduates who must be prepared to adequately fit into the entrepreneurial skills which have permeated the environment. There is no doubt that today, the wealth or poverty of many nations depends on the quality of education offered to its citizens. Thus, those nations that are able to provide the necessary skills and capacity of learning to its teaming population stand a better chance of attaining economic development while those of the poorly educated nations remain underdeveloped and dependent on the more developed or advanced nations with superior and more relevant skills.

Agricultural Education

Agricultural Education is one area that most students tend to shy away from studying despite the fact that it plays a major role in the economic life of a nation. Students who are expected to take up agriculture shy away from it as they live in a state of hopelessness; in search of white collar jobs which are not readily available while those left in this field are mostly farmers of between the ages of forty and above. These categories of farmers in most cases lack the relevant information and technical know - how required for modern agricultural practices.

A knowledge driven society is a society in which the economy is knowledge driven while a "knowledge- driven economy" is an economy in which the generation and exploitation of knowledge play the predominant part in the creation of wealth. To this end, developing pupils' entrepreneurial skills in practical agriculture for sustainable food production becomes imperative. Obioma (2011) asserts that a knowledge driven economy involves a more effective use of all types of knowledge and creativity in all manner of economic activity. Furthermore, in the advanced economies "knowledge" is fast becoming a strategic asset for economic development. For countries tapping into the new ideas, innovations and technologies that proliferate in a knowledge driven economy, there is an abundance of wealth and opportunities for their citizens.

The challenge for school systems all over the world is that of providing qualitative and effective education for children and youths which will prepare them for participation in the work place (United Nations Educational, Scientific and Cultural Organisation (UNESCO 2010).

Developing and sustaining pupils' entrepreneurial skills in the area of agriculture for sustainable food production is very vital to the economic development of a nation. Mustapha and Greennan (2002) stated that Vocational Agriculture Education (VAE) is a tool for addressing the economic, political and social crises that are threatening the political and economic stability of some nations such as Nigeria.

State of School Farms

The state of the school farms has been a major problem of agricultural education in the secondary schools and tertiary institutions. Thus the present agricultural education programmes in most of the secondary and tertiary institutions centre on theoretical work while little or no emphasis is given to practical agriculture. Students tend to shy away from practical work. Agricultural Science education teachers, do not help matters as most of them also do not take the practical aspect of the subject serious. The implication of this is that students' assessment is centred on the cognitive domain while the Affective and Psychomotor domain are given little or no attention, such approach can hardly bring career awareness and improved productivity. The National Policy on Education (4th Edition, 2004), clearly spelt out that "school programmes need to be relevant, practical and comprehensive, while interest and ability should determine individual's direction in education". This simply put implies that practical work should form the basis for preparing in this subject (Agricultural Science). From observations, this is not so with majority of the schools where Agricultural Science Education is taught.

According to Ikeoji, Agwubuike and Disi (2007), instead of discovery learning, problem solving, project and competency based learning, textbook reading, teacher telling and achievement test is what characterize the vocational Agricultural Education delivery in Nigeria schools.

Strategy for Developing Pupils' Entrepreneurial skills in Agriculture

Entrepreneurial skills is learning in which learners are made to access education curriculum outside of a traditional classroom. Educational courses are specifically delivered to them somewhere other than the classroom where the teacher is teaching. Aladejana (2008) defines agriculture as the combination of multiple approaches to learning which can be achieved by having equipment and materials and practical sessions used together to deliver instruction.

With regards to practical agriculture, pupils can learn through practical sessions. By providing several materials concerning agriculture related practices, pupils can learn in addition to classroom training. The use of modern equipment based tutorial methods can be effectively applied by agricultural education teachers for pupils to acquire knowledge and skills which will stimulate their interest in the subject. Following the introduction of agricultural education, teaching is not limited to the use of chalk boards, as various types of

software like tutorials, drill and practice are available for use.

Agricultural Science teachers should be able to make use of video camera, video discs, video cassette recorder in their teaching and learning. In doing this, as the students are taken out for the practical work on the school farm, their interest are already developed, having observed the practice through the video films presented. According to Ikeoji and Kayoma (2011), the video technologies could be used for guided and independent learning of skills such as in poultry, rabbits and pig production; crop production, and land/soil management practices etc. Agricultural Science education teachers are thus expected to arouse the interest of their pupils in the area of practical agriculture. The incorporation of some specific instructional materials would go a long way in developing the pupils interest. Entrepreneurial skills which are carefully structured for teaching specific topic/contents and demonstration of ideas and concepts, visually or through educational activities.

Challenges to the Application of Entrepreneurial skills in Promoting pupil's Interest in Practical Agriculture

A number of challenges tend to make the application of these strategies in schools difficult some of the challenges are presented here under:

1. Most of Agricultural Education teachers are not trained or knowledgeable in the use of entrepreneurship facilities for teaching and learning process.
2. Teachers' resistance to change from the traditional pedagogical methods to more innovative technology-based teaching and learning methods is another major challenge (Ifuedo, 2007).
3. Most of the schools where the teachers are not knowledgeable do not also have agriculture experts, system managers or support staff, who can be of assistance.
4. Most pupils do not have access to the infrastructure that will support the integration of entrepreneurial education.
5. Limited resources in terms of funds available to most of the schools are a great hindrance to the practical teaching and learning process of agriculture in the primary schools.
6. Most schools located in the rural areas do not have access to mechanized facilities. Pupils who could have therefore shown interest in entrepreneurial are not offered the opportunities. Such pupils develop negative attitude to agricultural practices.

Conclusion

The ability of pupils to have access to good equipment as well as their ability to acquire and utilize the knowledge and skills effectively in the field of practical agriculture would go a long way in promoting their interest in agriculture and sharpen their entrepreneurial spirit. Agricultural Education teachers need to be given the opportunities to update their knowledge in the area of modern farming application. Thus, there is need to expedite action to make the use of good equipment a necessity as a way of promoting pupils' interest in the teaching/learning of practical agriculture. As the pupils have access to modern farming and are able to observe some forms of agricultural practices like, poultry production, crop production etc. they can develop their interest in getting involved in some form of agricultural entrepreneurial activities at graduation.

Recommendations

Based on the discovery, the following recommendations were made:

1. Agricultural Education teachers need to update themselves in the use of modern equipment. This can be done through in-service training, seminars, workshops etc.
2. Government should facilitate the process of providing high breeding crops in primary schools
3. There should be private sector driven programme to provide schools with modern facilities for agriculture.
4. Government should try to bring

development in the rural areas through provision of agricultural facilities

5. Adequate funds need to be provided in schools by the government and other non-government agencies to support entrepreneurship in school agriculture.
6. School administrators should on their part, show interest in the provision of facilities in their schools for entrepreneurial skills development
7. Companies or industries that operate or produce agricultural facilities could be approached by school Administrators for assistance in the form of donating some facilities to the schools.

When these recommendations are implemented, it will go a long way in promoting pupils' interest in entrepreneurial agricultural practices after their graduation. This will help to increase agricultural production, and sustainable food production.

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