IJRESD
International Journal Of Education, Research And Scientific Development
https://www.ijresd.org
Impact Factor: 5.3/DOI: DOI: https://doi.org/10.3215/ijresd.v1i1
Vol.2 issue 1 May 2023

THE STRATEGIES FOR ENHANCING EFFECTIVE TEACHING AND LEARNING OF AGRICULTURAL SCIENCE IN SENIOR SECONDARY SCHOOLS IN OSISIOMA NGWA LGA OF ABIA STATE.

DR. OGBUOKA, Oby Modest
Dean Faculty of Social Sciences
African Thinkers Community of Inquiry College of Education Enugu, Enugu State
obyphd@gmail.com
&

Dr. B. C. Odinaka Ajibo
Dean Students Affair Peaceland College of Education Enugu.

A survey research design was used for the study. The study was conducted in public secondary schools in Osisioma Ngwa LGA of Abia State. The population of the study comprised of all the senior secondary school students in the government secondary schools in the Osisioma Ngwa LGA which is six thousand five hundred and thirty one (6531). A sample of one hundred and fifty (150) students was drawn from five (5) selected schools sampled out of the ten (10) government secondary school that were used for the study. The instrument used for data collection was a structured questionnaire. One hundred and fifty (150) copies of the questionnaire were administered by the researcher with the help of some agric teachers to the respondents. The entire questionnaire was collected from the respondent after they have been completed. Data were analyzed using mean score. Findings shows that adequacy of facilities helps the students in understanding agricultural science concepts better and boost their performances in the subject, that students taught with adequate instructional materials in agric science perform better and are more enlightened on agric science processes. Based on the findings of the study, the researchers recommended that teachers and students should develop a healthy attitude towards the teaching and learning of agricultural science in secondary school and Government should endeavor to provide all the needed agric facilities in schools for the proper teaching and learning of agricultural science.

Keywords: Strategies, Enhancing, Teaching, Learning and Agricultural Science

Introduction

Education at all levels and in all its forms constitutes a vital tool for addressing virtually all global problems. Education is not only an end in itself. It is a key instrument for bringing about changes in knowledge, values, behaviors and life styles required to achieve sustainability and stability within and among countries (Kingdom and Maekae, 2013).Education has been seen as the greatest force that can be used to bring about changes.

The Concept 'Agriculture Education'

It is not sufficient to make one sentence definition of agricultural education. The world book Encyclopedia defines agricultural education as instruction in agriculture useful to farmers, to those engaged in non-formal agricultural occupation and to all persons as part of the general education.
It is the training of learners in the processes of agricultural productivity as well

as in the techniques for the teaching of agriculture. "It is teacher preparation in agricultural production and in pedagogical skills in agricultural subject areas" (Olaitan, 2018). Agricultural education refers to the teaching of skills, values, attitudes, and related products (Egbule, 2014). Therefore, agricultural education is the type of education that is employed in training learners in the improved agricultural production process as well as in the techniques for the teaching of agriculture. It therefore, takes place at two levels, namely formal level which would take place at primary, secondary to graduate study in the university; and at informal level which goes on outside the formal school system.

Objectives of Agricultural Science Programmes at Secondary School Level.

The teaching of agriculture at the secondary school level in Nigeria today is done at two levels; at the Junior Secondary (J.S.S.) and at the Senior Secondary School (S.S.S). At the junior Secondary school, that is first three years of secondary education, 'practical agriculture' is recommended as one of the core subjects. According to Egbule (2014), the objectives of agricultural science Education at Secondary school level include

I. To stimulate students interest in agriculture
II. To develop basic agricultural skills in students.
III. To enable students acquire basic knowledge of agriculture
IV. To enable students to integrate knowledge with skills in agriculture Pristine
V. To expose students to opportunities in the field of agriculture
VI. To prepare students to opportunities in the field of agriculture
VII. To prepare students for further studies

Hindrance to Effective Teaching of Agricultural Science in Secondary School Level

Misconception of Young Farmers' Club - Experience has shown that here is always the tendency for students to see the farm products as nobody's property. There is also a strong tendency on the part of the students to misuse the club by imposing unauthorized levy, giving improper account, using the club activities as a camouflage to organize dances or parties with students of opposite sex, all lead to indiscipline in school thereby hindering the students exposure to agricultural programmes.
Incompetency of Teachers - The strength of any education system depends on the quality of its teachers. It is the teacher who eventually implements the curriculum through the interaction with students who are the immediate beneficiaries of the system. Agwubuike (2012), noted that there are not enough, competent graduate teachers or agricultural science in our schools. Madubuike (2014), stated that teachers who lack interest in farm activities but still qualified in agriculture because of their high grades in the theory aspect are not sufficiently qualified to teach agriculture in our schools. Lack of skill full agricultural science teachers in schools has resulted in the production of theory oriented agricultural science graduates. The shortage of qualified teachers has resulted in the following.

(a) Poor teaching methods - most teachers due to their incompetency lack focus on various teaching methods and materials to be used to enhance learning. Such materials like suitable textbooks, charts,

models, projected and non-projected devices even when these materials are provided, they still lack the best teaching method to break the course content.

(b) Students' laissez-faire attitudes - due to poor presentation of the topic by incompetent teachers, students feel it is not important to attend agricultural science classes especially practical.

Number of Period - The time allocated to agricultural science in the time table is not always sufficient for the teachers to lay a good foundation for agricultural science. The nature and significance of agriculture entails special provision of extra- curricular hours to enable the teachers to teach the theoretical and practical aspect. Akinpelu (2011), opined that it is true that agricultural science is an examinable subject by West African Examination Council, but then it cannot be adequately taught within the number of minutes allocated to it.
1. Insufficiency of fun - Schools are starved of funds by the government to enable them to erect and equip modern laboratories, procure adequate equipment, tools, repair and replace faulty equipment, procure fertilizers, drugs, feed etc. also schools are not adequately funded to establish school farms for practical.
2. Over loaded syllabus – the syllabus is overloaded that it does not allow for the proper teaching of the subject. The agricultural science covers the crop, animal, soil, economics, extension etc. the teachers find it difficult to cover the broad areas.
3. Non-cooperative attitude of heads of schools - some heads of schools especially the art oriented ones do not show any interest in practical agriculture in their schools. Whenever the teachers of agricultural science approaches them for financial assistance, they feel reluctant and rather extort the students' money. And in some cases these heads share the school farmland among teachers for farming.
4. Insufficient land - Land is one of the major factors in agricultural production. In some schools land are not enough for practical agriculture, this may result form the fact that communities where the schools are located may not agree to give out some of the land near the school environment out of greed. Osisioma (2014) pointed out that vocational agriculture involves training to acquire skills, aptitude for proficiency in farming. There is no way students of agriculture can acquire skill or proficiency in farming unless a farmland is provided. This invariably makes the teachers to produce unskilled students.

Inadequate Facilities/Equipment - Agricultural science cannot be properly taught
without adequate facilities and equipment, such as storage facilities, tractors, machine tools, and modern laboratory, computers etc. all these facilities are lacking in our secondary schools today. Osuala (2014) pointed out that the ultimate objective of vocation education is to train qualified technical personnel and skilled work force to meet the requirement of the society, regardless of how well the vocational education curriculum is prepared and how excellent the qualifications of the teachers are, inadequate facilities hamper the students learning in cognitive, affective and psychomotor domain.

Strategies for Improving Teaching/Learning of Agricultural

IJRESD
International Journal Of Education, Research And Scientific Development
https://www.ijresd.org
Impact Factor: 5.3/DOI: DOI: https://doi.org/10.3215/ijresd.v1i1
Vol.2 issue 1 May 2023

Science at Secondary School Level

1. Competent teachers - Effective teaching of agriculture must result in improved learning for students. It is a common defect in our educational set-up that most of the subject (Agric) teachers are not competent in the subject concern. Maduike (2017), stressed that at secondary school level, the professional and qualified teachers should stimulate both the students and themselves to enhance efficiencies in performance. Meanwhile, the subject teacher concern in one way or the other must have qualities on farm experience, general technical education character and personality. Orhieve (2015) noted that skilful teachers are vital to every dynamic successful training programme.

2. Suitable Curriculum - The term curriculum has been conventionally and broadly defined to all the experiences that the student is exposed to under the direction of a school. Egbule (2014) defined curriculum in agriculture to consist of series of courses including extra-curricular activities. The curriculum planners should select learning experiences from the learner's environment, which will help him (learner) to meet his motives and reflect the training needs of job market. To make curriculum efficient and more relevant to needs of the students, the following are important.

(a) Teacher-training programme should include the content of curriculum development on new approaches and method concerning the teacher/instructors' attitude.

(b) The participation of teachers/instructors in planning

(c) A system involving central and local governmental departments should be established to evaluate the curriculum implementation process which aimed at ensuring the quality of the programme offered.

3. School farm surveying and layout - The knowledge of survey principles and practices are essential for successful farm operations. In order to curtail the encroachment on school land by land – hungry neighbours, school farm are properly surveyed. Farm surveying deals with making measurement by means of figure table or layouts (Ikeoji and Egbule, 2013). It involves measuring vertical and horizontal distance between objects, determining artificial features present on the farm, and using such information as planning purpose.

4. Adequate funding: School farms are starved of funds. According to Olaitan (2012), it is very important to make use that here is enough fund before embarking on any vocational programmed if it is to meet the standard of vocational education and create awareness in the pupils. Development of vocational skills in agricultural science require a lot of funds for repairing and replacing of faulty equipment, employing more qualified staff, buying of fertilizers etc.

5. Effective organization of young farmers' club (Y.F.C.) – Idahor (2012), sees the
Young Farmers' club as a voluntary and democratic youth organization for boys and girls of between 10-25 years of age, and whose main objective is to develop the interest of our youths in agriculture. This programme is primarily designed to teach young people especially the students. In order to curb the problems of ignorance in agriculture, the government, community and the entire school should help to intensify this

club by assisting in the supply of tractor, hiring service, imposed seeds and other inputs. More so, appoint wealthy people as patrons to monitor the cash flow of the club.

6. Acquisition of more land for school farms - The current emphasis on functional educational programme makes it mandatory that school and colleges should keep farms. A school farm in this context is a piece of land located within or around the school and used for cultivation of crops and rearing of animals. Essentially, school farms are geared towards helping students to acquire necessary arming skills and ensuring that classroom theories are backed up by facts and practices. To provide students with opportunity of acquiring knowledge, skills and needed competencies in agriculture, the school farms should be enlarged. The community, which the school is located could be approached to donate enough land for schools' agricultural programmes. Government schools and colleges may also acquire land through the 'land use decree'. It is advisable therefore to make schools farms as large as possible but should not be too large as to become a burden to both the agricultural science teachers, the students as well as the administration.

7. Dynamic methods of teaching - For agricultural science to be improved at secondary school levels, agricultural science teacher must be a professional who combines knowledge of what he teaches with appropriate methods and techniques of teaching. A teaching strategy is an integration of method and techniques, which has to reflect expected activities for both teachers and learners for teaching/learning process. Maduike (2010), opined that any method that is adopted by the agricultural science teaches in the actual teaching exercise must lead to the development of ideas, concept understanding and attitudes by the students. Agricultural science by a practical oriented subject requires practices with diverse teaching methods like demonstration, project, field trip/excursion, laboratory work, discussion etc.

8. Availability of teaching materials/aid - Teaching aids or instructional materials consist of carefully planned and selected resources to facilitate teaching/learning process. According to Ughamadu (2012) instructional material refer to those materials like textbooks, chalkboard, models, charts, television, radio and other projected and non-project devices or tools, which bring about efficiency and effectiveness in the teaching/learning process and invariably promote and enhance the achievement of instructional objectives.

The researcher observed that agricultural education at the secondary school level has failed to produce graduates that have favorable attitudes to farming. This is a peculiar problem in learning of agricultural science by students in senior secondary schools in Osisioma Ngwa LGA of Abia State. Okorie (2014) also observed that many students have a tendency to develop negative attitudes toward agriculture because of inherent deficiencies in the program. There have been complaints about the poor performance of students in agriculture science in secondary schools due to the use of poor equipment to teach the subject. This has its implication as observed by Egun (2020) that Nigerian education is too theoretical and not preparing students for real life. The goals of teaching Agricultural

Science cannot be achieved without practical skills particularly in secondary schools in Osisioma Ngwa. Taiwo (2011) maintained that schooling is an aspect of the process of developing the abilities, attitudes and other behaviors of an individual. Youths are always seen as the hope of the nation if proper teaching is given to them in schools. The need to come up with strategy for improving teaching of practical agriculture becomes imperative.

Research Questions

The following research questions guided the study

1. To what extent are the availability and adequacy of the resources for teaching and learning Agricultural science in senior secondary schools in the study area?
2. To what extent is the adequacy of the processes used in teaching and learning Agricultural science in senior secondary schools in the study area?

Methodology

A survey research design was used for the study. The study was conducted in public secondary schools in Osisioma Ngwa LGA of Abia State. The researcher choosed this study area because he has prior knowledge of the study area based on their educational achievement because he was once a student there. The population of the study comprised of all the senior secondary school students in the government secondary schools in the Osisioma Ngwa LGA which is six thousand five hundred and thirty one (6531) PPSMB 2020. A sample of one hundred and fifty (150) students was drawn from five (5) selected schools sampled out of the ten (10) government secondary school that were used for the study. Simple random sampling was used to select thirty (30) students from each of the selected five (5) schools giving a total sample size of one hundred and fifty (150) students that was used for the study. The instrument used for data collection was a structured questionnaire which was designed by the researcher. The instrument was validated by two lecturers in Agric Department and one expert in Measurement and Evaluation, Enugu State University of Science and Technology (ESUT) Enugu. Their criticism and corrections were used in modifying the instrument. One hundred and fifty (150) copies of the questionnaire were administered by the researcher with the help of some agric teachers to the respondents. The entire questionnaire was collected from the respondent after they have been completed. Data were analyzed using mean score. For the sake of taking decision, any mean that is of 2.5 and above is considered agreed while any mean below 2.5 is disagreed.

Results

This chapter focused on the data presentation and analysis of the results from the research questions that guided the study.

Research Question 1;

To what extent are the availability and adequacy of the resources for teaching and learning Agricultural science in senior secondary schools in the study area?

Table 1; Mean responses on the availability and adequacy of the resources for teaching and learning Agricultural science in senior secondary schools in the study area

IJRESD
International Journal Of Education, Research And Scientific Development
https://www.ijresd.org
Impact Factor: 5.3/DOI: DOI: https://doi.org/10.3215/ijresd.v1i1
Vol.2 issue 1 May 2023

SN	ITEMS	SA (4)	A (3)	D (2)	SD (1)	N	∑FX	X	Remarks
1	Agricultural science laboratories and facilities enhances the performance of teachers in teaching and learning of agric science	60	40	-	-	100	360	3.6	A
2	It has helped students in sampling out different models, testing hypothesis on their own without the teachers guide	50	50	-	-	100	350	3.5	A
3	Adequate agric science facilities helps both the teachers and students interaction in the classroom to be effective	80	20	-	-	100	380	3.8	A
4	CD-ROMS with important contents of secondary school subjects can equally be used in teaching and learning of agric science topics	70	30	-	-	100	370	3.7	A
5	Multimedia is the embodiment of text, graphics, animation, pictures, sound and video clips and it can be easily used in teaching and learning of agric science	55	45	-	-	100	355	3.6	A

From the computed mean in table 1 above, it shows that items 1-5 have the mean score of 3.6, 3.5, 3.8, 3.7 and 3.6 respectively which indicates that the respondents agreed on the listed impact of agric science laboratories and facilities in teaching and learning of agric science.

Research Question 2;

To what extent is the adequacy of the processes used in teaching and learning Agricultural science in senior secondary schools in the study area?

Table 2; Mean responses on the adequacy of the processes used in teaching and learning Agricultural science in senior secondary schools in the study area

SN	ITEMS	SA (4)	A (3)	D (2)	SD (1)	N	∑FX	X	Remarks

6	Agricultural science laboratories and facilities enhances the performance of teachers in teaching and learning of agric science	70	30	-	-	100	370	3.7	A
7	It has helped students in sampling out different models, testing hypothesis on their own without the teachers guide	50	50	-	-	100	350	3.5	A
8	Adequate agric science facilities helps both the teachers and students interaction in the classroom to be effective	80	20	-	-	100	380	3.8	A
9	CD-ROMS with important contents of secondary school subjects can equally be used in teaching and learning of agric science topics	55	45	-	-	100	355	3.6	A
10	Multimedia is the embodiment of text, graphics, animation, pictures, sound and video clips and it can be easily used in teaching and learning of agric science	60	40	-	-	100	360	3.6	A

From the computed mean in table 2 above, it could be seen that items 6-10 have the mean scores of 3.7, 3.5, 3.8, 3.6 and 3.6 respectively which shows that the respondents agreed on the listed adequacy of the processes used in teaching and learning Agricultural science in senior secondary schools in the study area

Discussion of Findings

Findings in table 1 showed that adequacy of facilities helps the students in understanding agricultural science concepts better and boost their performances in the subject.

Findings in table 2 also showed that students taught with adequate instructional materials in agric science perform better and are more enlightened on agric science processes.

Conclusion

Based on the findings of the study, the researcher concluded that suitable curriculum, adequate funding, establishment of school young farmers club help in enhancing the teaching and learning of agricultural science in secondary schools

Recommendations

Based on the findings of the study, the researchers recommended that

i. Teachers and students should develop a healthy attitude towards the teaching and learning of agricultural science in secondary school.
ii. Government should endeavor to provide all the needed agric facilities in schools for the proper teaching and learning of agricultural science.
iii. They should also endeavor to employ competent teachers that will be handling these devices during teaching and learning.

References

Abinbade, A. (2011). *Principles and Practice of Technology*. International publishers Ltd. Ibadan.

Abubakar A. B. (2013). Education and Sustainable National Development in Nigeria: Challenges and Way Forward. *Mediterranean Journal of Social Science 4(8)147- 152 Doi:10.5901/mjss.2013.v4n8p147*

Agbulu, O. N. & Wever, D.G. (2011). *Introduction to Vocational Agricultural Education*. Makurdi: Selfers Academic Press Ltd.

Ajiboye, G.Y. (2013). Fostering Vocational Agriculture through National Agricultural Transformation Agenda in Nigerian Secondary Schools. *Nigerian Journal of research in Education*. Kontagora, Niger State

Amadi, U.P.N. (2011). Availability and Utilization of Instructional Resources in Teaching and Learning Agricultural Occupation Skills in Taraba State Secondary Schools Unpublished PhD Thesis Nnamdi Azikwe University, Awka

Aminu, J. (2016). Issues and challenges In Nigerian Education In the 21st century. *Farfaru Journal of Multi- Disciplinary studies* Vol. I. Sokoto.

Anyanwu, C.N. (2017). Community Development. The Nigerian perspective. Ibadan: Gabesther Educational publishers.

Chinwe, N.I. (2014). Position of workshop tools for Training in vocational Technical Institution. Nigeria *Vocational Journal 1 (1) 176 – 184*.

Daphine, P. (2012). Learning to teach, Teaching to learn. A hand book for National University of Singapore (NUS) Teachers. Retrieved on 29 November, 2012. From www.cdtl.nus.edu.sg/handbook/s

Egun, A. C. (2009). Focusing Agricultural Education for Better Productivity in Nigeria in the 21st century. *International Journal of Educational Science.* 1(2). 87-90

Egunsola A., Denga, L. and Pev, I. (2014). Development and Standardization of Agricultural Science Achievement Test for Senior Secondary School Students in Taraba State, Nigeria. *Journal of Education and Leadership Development*, 6(2), 72 – 85.DOI:DOI:DOI:DOI: 10.13140/RG.2.2.32650.47045 www.cenresinpub.org/pub/DECEMBER2014

Farauta K., Yaro A. and Pev I. (2015). Adoption of Yam Minisett Technique by Small Scale Farmers in Taraba State, Nigeria. Journal of Agriculture and Veterinary Sciences, 7 (1), 75 – 90. www.cenresinpub.org/javsjune15.html

Farauta1 K. G.andAmuche C. I. (2013). Implementation of agricultural science curriculum in Taraba State school system: imperatives for students' occupational Skills acquisition, Journal of Education and Practice, 4(15), Pp. 1 – 7, Retrieved on 10th

December, 2016 from www.iiste.org

Federal Government of Nigeria, (2012).National Policy on Education.4th Edition Lagos, Nigeria NERCD.

Kingdom E. O. and Maekae J. (2013).The Role of Education in National Development: Nigerian Experience. *European Scientific Journal, October* 2013 Ed. 9 (28), 312 - 320.

National Commission for Colleges of Education (NCCE) (2012). Minimum Standard for Nigeria Certificate on Education (NCE). Kaduna. Fazeez Enterprise.

National Examinations Council (2014). Regulations and Syllabuses for Senior School Certificate Examination (Revised Edition). P 52 – 80 Enugu Otuson Nigeria Limited.

Ndagana, J. M. & Onifade, S. (2016). Strategies for Motivating Students in Learning Introductory Technology in Junior Secondary Schools. The case study of Obokon L.G.A of Osun state, *Nigeria. Journal of Education and Technology*.1 (4). 169-179

Nigerian Educational Research and Development Council (2011). Senior Secondary Education Curriculum in Agricultural Science for SS 1 – 3 (Revised Edition). Lagos: NERDC press

Nsa, S.O.; Ikot, A.S. &Udo, M.F, (2013) Instructional Materials Utilization and Students performance in practical Agriculture. Journal and Education Research and Reviews Vol. 1 (4), 49-54. Science web Publishing

Nworgu, B. G. (2011). Educational Research: Basic issues and methodology, Ibadan: Wisdom press ltd.

Okorie, J.U. (2001). Vocational Industrial Education. Bauchi: League of Researchers in Nigeria.

Olatoye, E.I. (2012) Learning to practice the design of Clinical Experience in Teacher Preparation. Educational Evaluation and Policy Analysis; 26 (3), 237-312.

Oloruntoba, A. (2016). Perceived Professional competencies of Agriculture Extension Agents in Ijebu-Ode zone of Ogun State Agricultural Development Programme, Nigeria. *Journal of Agricultural science, Science, Environment and Technology*

Taiwo, C. O. (2011). The Nigeria educational system: past, present and future, Thomas Nelson (Nig) Ltd.

Yakubu, S. (2010). Strategies for Improving Teaching and Learning Practical Skills in Motor Vehicle mechanics trade in Technical Colleges in Gombe state. *Journal of vocational and technical education*. 2. (2), 47-53.