



## Assessment of Factors Responsible For Discrepancies and Enrichments in Secondary School Agricultural Science Curriculum in Delta State, Nigeria

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### ABSTRACT

The study investigated factors responsible for discrepancies and enrichments in the implementation of the Agricultural Science Curriculum in public secondary schools in Oshimili South Local Government Area of Delta State. To achieve this purpose three research questions and three (3) null hypotheses were raised and postulated to guide the study. The descriptive survey was adopted as the research design for the study. Two sets of structured questionnaires entitled 'Discrepancies and Enrichments in the Agricultural Science Curriculum' were used for data collection. Forty (40) Agricultural science teachers and seven principals were randomly selected using simple random sampling technique, from seven public secondary schools across the four communities that made up the study area for the study. Data obtained were analyzed using frequency, percentages, mean and standard deviation. The study showed that discrepancies do exist in the implementation of the curriculum of senior secondary. It was therefore recommended that the availability of agricultural science laboratories and demonstration farms should form the basic prerequisite for the accreditation of agricultural science subject offered in public secondary schools.

**Keywords:** - Assessment, Factors, Discrepancies, Enrichments, Secondary School, Agricultural Science , Curriculum, Delta State and Nigeria.

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### 1. BACKGROUND TO THE STUDY

Curriculum implementation is a vital component of the curriculum process. The combined goals intended during curriculum planning and curriculum development can only be achieved through a comprehensive and well articulated programme of implementation. However, the overall outcome of curriculum implementation has been found to have some form of bearing with certain curricular threshold concepts such as discrepancies and enrichments. Kensanan (1997) described discrepancy in curriculum as a difference between the values of broad curriculum and the values, which the teacher brings into the curriculum and the instructional process. In other words it is the line of divergence between the official curriculum and the curriculum that is executed. The Agricultural Science curriculum of senior secondary schools embodies an aggregate of content and learning experiences in agriculture, which must be effectively implemented if the broad objectives of the Agricultural Science programme must be achieved. If what was intended to be implemented as curricular content and learning experiences is at variance with the curriculum-in-use, it will definitely have a significant reflection on the products of the programme and the outcome of the learning process itself.

Obviously, there is a huge expectation on the basic education programme to produce secondary school individuals who upon graduation should be self-sufficient having acquired competences and proficiencies in basic vocational skills (Dakpo, 2008). In Nigeria, Agricultural Science is been highly relied upon to fast-track the attainment of the objectives of the basic education programme hence, the Agricultural Science curriculum of senior secondary schools was designed to accommodate those content and learning experiences that will culminate in exposing the learners to such skills, attitude and knowledge in agriculture that can guarantee self sustenance after school.



However, the realization of this will depend largely on thorough, conscious and full implementation of the curriculum. Nonetheless, there are concerns among curriculum experts as to whether or not the provisions of the formal curriculum of Agricultural Science of senior secondary schools suffice enough to sustain post-school self-sufficiency in the learners when subjected to congruent discrepancy alone. Sardar ( as cited in Edozie, 2013) defined congruent discrepancy as a situation whereby the teacher plans, selects and organizes content, methods and learning resources in line with the expectation of the formal curriculum. It therefore means that the curriculum should be meticulously implemented, strictly on the basis of those curricular content and learning experiences that are conspicuously prescribed.

The concerns as to how far congruent implementation can deliver the objectives of the senior secondary school Agricultural Science curriculum, so as to expose learners to basic skills and aptitude required for work and ultimately guarantee self-sufficiency after school have necessitated a consideration for some form of enrichment by some teachers. To his end an enrichment programme is imperative. According to Santrock (2001), an enrichment programme provides learners with opportunities for learning that are usually not present in the curriculum. It is a deliberate effort by a teacher to reasonably stretch the content and learning experiences of curriculum beyond its originally specified boundaries for the purpose of instilling in the learners those skills, values, attitude and knowledge deemed indispensable for the attainment of the objectives of a given programme.

Edozie (2013), agree that positive discrepancy is in fact curriculum enrichment. It is for this reason that certain teacher-facilitated non-curricular-inclusions have been found to have certain influence on learning outcomes and on the fulfillment of teaching-learning objectives. Some other forms of influences also have continued to characterize learning outcomes due to marked differences between the official and the taught curriculum. Therefore, it is the idea of this research study to try to link the degree of attainment of the set-objectives of the Agricultural Science curriculum of senior secondary schools to the concepts of discrepancy and enrichment in other to ascertain how they relate with teacher preferences and competences during classroom implementation.

### **1.1 Statement of the Problem**

Some researchers have found it quite comfortable to report the poor implementation of the senior school Agricultural Science curriculum. Not much effort seem to have been put into finding out what is originally intended to be implemented and what was finally executed as well as the extent of execution. Furthermore, the process of curriculum implementation seems not to have gone without certain elements of enrichment in some situations. However, no commensurate analysis seems to have been made to ascertain the level of impact that this has created on learning outcomes. To this end, the focus of this study is to investigate the factors responsible for discrepancies and enrichments in the implementation of the Agricultural Science curriculum of senior secondary schools in Oshimili South Local Government Area of Delta State, Nigeria.

### **1.2 Objectives of the Study**

The objectives of the study were to:

- ❖ Find out the extent of discrepancy between the official Agricultural Science curriculum of senior secondary schools and the curriculum- in –use in terms of implementation.
- ❖ Determine teacher-related factors of discrepancies and enrichments that affect the agricultural Science curriculum implementation of senior secondary schools.
- ❖ Examine the roles of principals/school heads in the implementation of the official Agricultural science curriculum of senior secondary schools.

### **1.3 Research Questions**

The following research questions were raised to guide the study:

- ❖ What is the extent of discrepancy between the official Agricultural Science curriculum of senior secondary schools and the curriculum-in-use in terms of implementation?
- ❖ What teacher-related factors of discrepancies and enrichments affect the implementation of the Agricultural Science curriculum of senior secondary schools?
- ❖ What are the roles of principals/school heads in the implementation of the official Agricultural science curriculum of senior secondary schools?



#### 1.4 Scope of the Study

The study was limited to senior secondary schools in Delta State. The study also delimited to the teachers of Agricultural Science in selected senior secondary schools in Oshimili-South Local Government Area of Delta State where Agricultural Science is offered as a subject.

## 2. RESEARCH DESIGN AND POPULATION

This research was a descriptive study and a survey and the population was made up of all government owned secondary schools in each of the four communities that make up Oshimili South Local Government Area of Delta State. The Table 1. below gives a summary of the communities and public secondary schools in Oshimili South Local Government Area (OSLGA) of Delta State.

**Table 1: Summary of Communities and Public Secondary Schools in OSLGA of Delta state, Nigeria**

S/N	COMMUNITIES IN OSLGA OF DELTA STATE	NAMES OF SELECTED SECONDARY SCHOOLS
1	Asaba Metropolis	Asagba Mixed Secondary School Niger Mixed Secondary School Osadenis High School West-End Mixed Secondary School Zappa Mixed Secondary School
2	Anwai	Nil
3	Oko	Okoamakom Secondary School Basic Secondary School
4	Okwe	Okwe Secondary School
	<b>TOTAL</b>	<b>9</b>

#### 2.1 Sample and Sampling Technique

For the purpose of this study, seven public secondary schools were drawn from the population using the simple random sampling technique with the target group being teachers of agricultural science and the principals in the randomly selected secondary schools. Four out of the six government owned secondary schools in Asaba metropolis were randomly selected while all the schools in the other communities were selected. All the forty (40) agricultural science teachers in the selected schools as well as all the seven (7) principals were used for this study. This was due to the small sample size of the agricultural science teachers in the sampled schools. The sample is appropriate to this study since teachers are the chief implementers of curriculum and classroom instruction while the principals constitute the agents by which government runs implementation programmes in secondary schools.

#### 2.2 Instrument

Two sets of structured questionnaires were used in obtaining data for the study. Twenty (20) items were generated for research questions 1 to 2 and was administered to teachers of Agricultural science in the sampled secondary schools. The second set comprised 10 items generated from research question 3 and was administered to principals of the selected schools.

#### 2.3 Validation of the Instrument

The instrument used for the study was subjected to validation by three experts in the agricultural department in a university faculty. The instrument was examined for face and content validity.



### 2.4 Method of Data Collection

Primary data was obtained through the distribution of the questionnaires by three (3) research assistants. All distributed copies of questionnaires were filled by the respondents and collected on the spot. This helped to eliminate transit-loss or delays in submission and compilation.

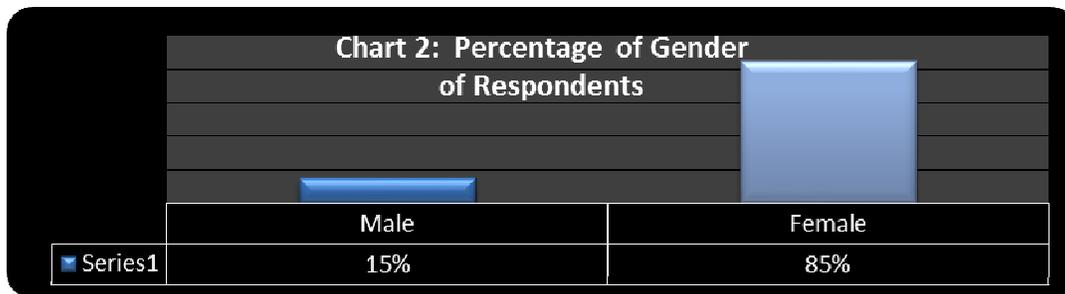
### 2.5 Method of Data Analysis

Data were analyzed using descriptive statistics which included frequency, percentages, mean and standard deviations in line with the questions raised for the study. A 5-point Likert rating scale was used and nominal values assigned to each as follows; Strongly Agree (SA) 5., Agreed (A) 4, Undecided (U) 3, Disagreed (D) 2, and strongly Disagreed (SD) 1. The Mean decision rule was established at 3.00. Thus any item with mean rating of 3.00 and above was accepted whereas anyone with mean rating below 3.00 was rejected.

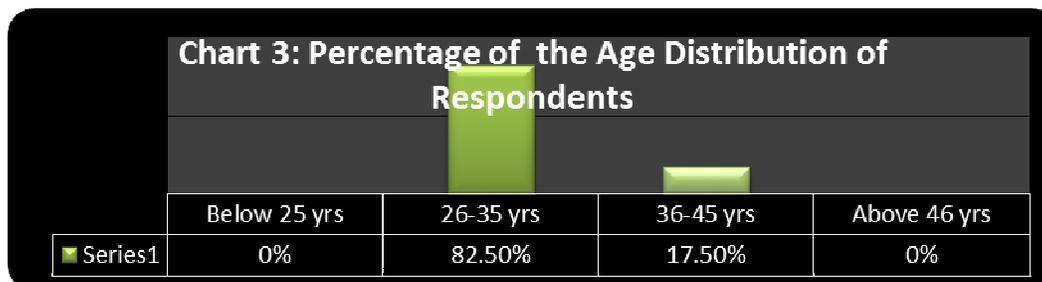
## 3. DATA ANALYSIS

Data, as well as results obtained for this study were analyzed as follows:

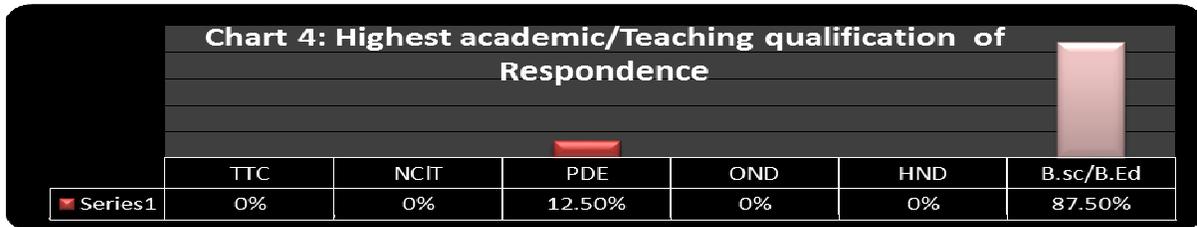
### 3.1 Analysis of Demographic Variables



Analysis of the result in chart 2 showed that 15% and 85% of the agricultural science teachers in the sampled schools were males and females respectively. The result indicates that there are relatively more female agricultural science teachers than their male counterparts teaching the subject in the selected schools.



Analysis of result in Chart 3 showed that 82.5% of the teachers were between the ages of 26-35 while 17.5% stood between the ages of 36-45. None of the teachers were less than 25 years or above 45 years. The teaching workforce is relatively within the productive class.



Analysis of the result in 4 revealed that 12.5% and 87.5% of the teachers had PDE and B.sc/B.Ed respectively as their highest academic/teaching qualification. None of teachers was found on the TTC, NCE, OND or HND levels. Majority of the teaching workforce are first degree graduates.

### 3.2 Analysis of Research Questions

**Research Question 1:** What is the extent of discrepancy between the official agricultural science curriculum of senior secondary schools and the curriculum-in- use in terms of implementation?

**Table 2: Mean responses of teachers on extent of discrepancies between the official agricultural science curriculum of senior secondary schools and the curriculum-in-use in terms of implementation.**

ITEMS	$\bar{X}$	$S^2$	REMARKS
WAEC and other examination bodies hardly supervise the activities of schools in terms of implementation	3.25	1.10	Agreed
Existing equipments and facilities for the effective implementation of the agricultural science skill content are poorly maintained by schools	3.65	0.69	Agreed
Most secondary schools do not have the school demonstration farm and agricultural science laboratory which are key components in the WAEC provision for senior secondary agriculture.	3.20	1.09	Agreed
Most agricultural science teachers consider the skill content and learning experiences provided in the senior secondary agricultural science syllabus too broad to be covered in a space of 3 years and may resort to selective implementation of topics/lessons due to time constraints.	3.18	1.01	Agreed
Most textbooks and instructional materials in agricultural science that are available to teachers and by which they teach hardly cover the whole content as prescribed in the agricultural science syllabus.	2.15	0.98	Disagreed
Activities of field trips, excursions and visitations are hardly carried out due to lack of resources; finance time personnel etc.	3.22	0.84	Agreed
Secondary school graduates of agricultural science would later undergo post-secondary school training, apprenticeship in fishery, poultry or piggery farms etc. before they can be self-employed or secure a job.	3.10	1.02	Agreed
The objectives of the agricultural science curriculum of senior secondary schools may not have been fully understood by some agricultural science teachers.	3.33	1.02	Agreed
The school time-table is unable to accommodate task for all contents specified in the agricultural science scheme of work for the term.	3.25	0.74	Agreed
Most secondary school graduates of agricultural science are ill-equipped to secure gainful employment in agricultural industries after graduation.	3.68	0.66	Agreed



Analysis in table 2 revealed the views of the respondents on the extent of discrepancy between the official Agricultural science curriculum of senior secondary schools and the curriculum-in-use in terms of implementation. The respondents agree with all the items except for item (5) with mean score of 2.15( $S^2=0.98$ ) to which they jointly disagree. The result is indicative of the fact that there are discrepancy between the official agricultural science curriculum of senior secondary schools and the curriculum-in- use in terms of implementation.

**Research Question 2:** What teacher-related factors of discrepancies and enrichments affect the implementation of the agricultural science curriculum of senior secondary schools?

**Table 3: Mean responses of Teachers on teacher-related factors of discrepancies and Enrichments and the effect on the implementation of the Agricultural Science curriculum of senior secondary schools.**

ITEMS	X	S <sup>2</sup>	REMARKS
Most teachers prefer to teach only those topics, they find interesting to them and which they consider relevant to the students.	2.15	0.86	Disagreed
Most teachers deliberately ignore those topics/lessons for which they do not have enough subject-matter competence.	1.98	0.80	Disagreed
Some teachers use real-life objects as instructional media during classroom instructions.	3.21	0.85	Agreed
Most agricultural science teachers are less disposed to field trips and excursions	3.25	0.84	Agreed
Most lessons on fish production, crop production, poultry farming etc are done in the classroom without practical demonstrations in the school farm.	3.60	0.84	Agreed
Some agricultural science teachers are not skilled in practical laboratory and farm operations.	3.60	0.17	Agreed
Some teachers organize students to set-up and maintain demonstration farms.	2.28	0.85	Disagreed
Some teachers of agricultural science engage students in individual/group supervised live-projects and home-stead farming.	3.15	1.10	Agreed
Some teachers feel the curriculum planners did not take into account the actual classroom situation in terms of practice.	3.32	0.78	Agreed
Some Agric teachers feel they may not have been carried along in the designing of the curriculum which they are expected to implement.	3.68	0.76	Agreed

Analysis in table 2 revealed the views of the respondents as teacher related factors of discrepancy and enrichment which affect the implementation of the agricultural science curriculum of senior secondary schools, The respondents all agree to the various items except for items (i) with mean score of 2.15( $S^2= 0.86$ ) (ii) with mean score of 1.98( $S^2=0.80$ ) and (vii) with mean score of 2.28( $S^2=0.85$ ) to which they jointly disagree.

The result is indicative of the fact that there several teacher-related factors results in discrepancies and enrichments that affect the implementation of the agricultural science curriculum of senior secondary schools



**Research Question 3:** What are the roles of school heads/principals in the implementation of the official agricultural science curriculum of senior secondary schools?

**Table 4: Mean responses of Principals/school/Head on their roles in the implementation of the official agricultural science curriculum of senior secondary schools.**

ITEMS	X	S <sup>2</sup>	REMARKS
Proposals for the establishment of school demonstration farms meet with so many bureaucracies and are hardly ratified by the ministry.	3.25	0.84	Agreed
There are no existing financial provisions by government for field trips and excursions even though they are specified in the curriculum	3.68	0.76	Agreed
Most teachers of agricultural science are ill-disposed to field trips and excursions and would hardly propose same even when the school could ratify it.	3.65	0.76	Agreed
There are no firm programmes of government supervision of the level of compliance by schools to the provisions stated in the official agricultural science curriculum.	3.15	1.10	Agreed
Ministry of education would pay more attention to equipping the biology, chemistry and physics laboratories which are considered pure sciences than that of agriculture	3.54	0.84	Agreed
Some teachers of agriculture see their involvement in the setting up and management of the school demonstration farms as an additional responsibility that should be avoided.	3.10	0.71	Agreed
Requesting parents through the PTA, to assist the school financially to set up students' demonstration units for poultry and fish farming have not been fully explored.	3.19	0.71	Disagreed
Maintaining the existing equipment and facilities in the agricultural science laboratory requires supplementary funding which not provided for by government.	3.63	0.85	Agreed
The introduction of Animal Husbandry as a subject to be taught in secondary schools should have been preceded by specialized on-the-job refresher training of the existing Agric science teachers for effective implementation.	3.60	0.84	Agreed
Lack of teacher compliance with principal's directives on teaching and learning is a major course of discrepancies in implementation.	3.44	0.88	Agreed

Analysis in table 5.0 revealed that the respondents jointly agree with all items as the roles of principals/school heads in the implementation of the official agricultural science curriculum of senior secondary schools. The result is indicative of the fact that Principals/school/Heads play major roles in the implementation of the official agricultural science curriculum of senior secondary schools.



#### **4. SUMMARY OF THE MAJOR RESEARCH FINDINGS**

The following were the major research findings:

The skill contents and learning experiences provided in the senior secondary agricultural science curriculum are too broad to be covered in a space of three years as such the school time-table is unable to accommodate tasks for all contents specified in the scheme of work for term, consequently teachers resort to selective implementation of topics/lessons due to time constraints. Activities of field trips, excursion and visitations are hardly carried out due to lack of resources; finance, time, personnel etc., even as most schools were found to be lacking demonstration farms and agricultural science laboratories.

WAEC and other examination bodies are not consistent in supervising the activities of schools in terms of the implementation of the content of the agricultural science curriculum. The proposals by principals of schools for the funding and establishment of school demonstration farms meet with so many bureaucracies and are hardly ratified by the ministry. There are no firm government programme of curricula compliance by schools. Moreover, government have failed to appropriate fund to schools for field trips and excursion.

#### **5. CONCLUSION**

Based on the findings of this study, it could be concluded that discrepancies exist in the curriculum of senior secondary agriculture since secondary school graduates of agriculture can neither secure a gainful employment nor be self employed after graduation even though the skill content of the official curriculum of senior secondary agriculture has been revealed by Ochu and Umunnagbu(2005) to be sufficient enough to produce middle-level manpower for the agricultural sub-sector of the economy. Learning activities which can minimize curriculum discrepancies and instill the right skills and knowledge that can guarantee the production of secondary school graduates of agriculture who can secure and hold a job in the industry include field trips and excursion, exposure to laboratory practices and field experiences in demonstration farms, all of which are conspicuously absent in most secondary schools especially those sampled in this study.

Enrichment of the senior school agricultural science curriculum through holiday residential programmes, supervised live-projects and home-stead farming, curriculum compacting and modular representation has been proposed. However a space of three years have been found to be too short to exhaustively implement the broad content of the official senior school agricultural science curriculum. Government has failed to ratify curricula enrichment proposals by school principals. Also, government facilitated curricula innovations have not been followed by specialized training to ensure proper implementation. It is important that agricultural science teachers be carried along in every stage of planning and designing of the agricultural science curriculum since they are the end-implementers.



## 6. RECOMMENDATIONS

The NRC (1998) recommended changes in agricultural education: "special applied science courses on agricultural topics should be available as optional elective courses for those students who wish to go beyond the traditional science course curriculum" (P. 15). Numerous recommendations arise from the findings of this study: The availability of agricultural science laboratories and demonstration farms should form basic prerequisite for the accreditation of agricultural science as a subject to be offered in public secondary schools. This will help to stem the problem of discrepancies between the intent of the curriculum and the output of the graduates in terms of practical knowledge.

Activities of field trips and excursions should constitute a compulsory aspect of every lesson of an out-field orientation. Agricultural science curriculum planners should consider streamlining the curricular content into packages that can allow for easy compacting and modular representation by teachers. The use of demonstration and task analysis should be employed involving students in home-stead farming and supervised live projects. A holiday residential programme where students are brought together and engaged in agriculture and science through classroom, laboratory and field experiences should be highly encouraged by schools. This will be helpful especially to deprived, gifted and talented learners. Students should be assigned into groups with specific projects as this will foster patriotism, cooperation and a sense of inquiry in them especially when such projects are properly supervised. Stakeholders in curriculum planning must carry along teachers of agricultural science in every stage of the process since teachers are the end-implementers of curriculum.

Government should make provision in terms of training of existing manpower if any curricula innovation is expected to be properly implemented.

## 7. SUGGESTIONS FOR FURTHER STUDIES

The following suggestions for further research have been proffered:

Research should be conducted with a population consisting of officials of the ministry of higher education, WAEC and other examination bodies and students offering senior secondary agricultural science to determine the reasons for discrepancies in curricula implementation. Finally, Researchers should look for ways to develop challenging agricultural science curriculum for elementary and junior secondary schools' gifted and talented students with the goal of providing exposure to the many career opportunities in the industry. Finally, researchers should investigate the perceived gap between teachers of agriculture and planners of the agricultural science curriculum. This will further help to curb the problem of discrepancies in implementation.



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