

# **STRATEGIES FOR IMPROVING STUDENTS' ACADEMIC PERFORMANCE IN AGRICULTURAL SCIENCE BY TEACHERS IN SECONDARY SCHOOLS IN AGBANI EDUCATION ZONE, ENUGU STATE**

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**Abstract:** The study was aimed at determining the strategies for improving students' academic performance in agricultural science by teachers in secondary schools in Agbani Zone, Enugu State. The study adopted a survey research design. Five research questions and five hypothesis guided the study to achieve the purpose of the study. The null hypotheses were tested at probability of 0.05 level of significance and appropriate degree of freedom. The population for the study comprised 73 agricultural science teachers and 45 principals in the 45 secondary schools in Agbani Education zone. There was no sampling because the population was manageable. Structured questionnaire was used as instrument for data collection, made up of 47 items. The instrument was validated by three experts and Cronbach Alpha statistics was used to determine the internal consistency of the instrument and a grand coefficient of 0.75 was obtained. The data collected were analyzed using mean to answer the research questions and t-test to answer the null hypothesis of no significant difference. The finding of the study revealed among others 11 lesson plan preparation related strategies, 10 lesson presentation related strategies, 9 utilization of instructional material related strategies, 8 classroom management related strategies and 9 evaluation of students related strategies that teachers could use for improving the academic performance of students in agricultural science. The null hypotheses tested showed that there was no significant difference between the mean ratings of teachers and principals on all the strategies that teachers could use to improve the students' academic performance in Agbani Education Zone, Enugu State. Based on the findings it was recommended that agricultural science teachers should use the identified strategies in teaching students in secondary schools and school administrators should supervise and ensure that agricultural science teachers use the identified strategies to a high extent for improvement in the academic performance of students.

**Key words:** Strategies, Improvement, Students, Academic Performance, Agricultural Science And Teachers.

## **Introduction**

Agricultural science is one of the important subjects taught in secondary schools which prepares the students for life career after graduation. It has the objective of inspiring students towards academic achievement and self-improvement both at school and agricultural production in later life. In the context of this study, a student of agriculture can be viewed as a person who is very interested in studying agriculture in secondary school. This student has enrolled in order to acquire knowledge, skills and attitudes in agricultural science (Nwosu, 2015). The author went further to opinion that these group of students are interested in taking agricultural science as a vocation after graduation from secondary school (Education).

Secondary education is an education children (youths) receive after primary education and before tertiary education (National Policy on Education (NPE), 2004). This implies that it is at this stage of education that students are prepared for career choice. With reference to this study, it is the teachers of agricultural science that are charged with the responsibility of imparting agricultural knowledge, skills and attitudes to students in secondary schools. This was why Olaitan and Mama (2009) saw a teacher of agricultural science as one who is trained in both knowledge and skills as well as methodology of imparting skills to the students in the subject. In Agbani Education zone which is the study area, it is expected that agricultural science teachers should use these skills they have acquired to impart knowledge to the students for improved academic performance.

Academic performance is the extent to which a student teacher or an institution has attained its short or long term educational goals. To Williams (2018), academic performance is the ability to master a diverse set of skills which extends to achievement outside the classroom. This implies that in order to master these diverse set of skills, the students must be taught. Nnaji (2017) opined that the goal of teaching is to bring about desirable change in the students' academic performance. The author further stated that teaching is any activity that helps learners acquire knowledge and think independently. It is a two way traffic system involving exchange of ideas between the teacher and the students (Eze, 2016). This shows that agricultural Science teachers should employ all the necessary methods including strategies in teaching so as to improve students' academic performance.

A strategy is a structured and carefully desired plan for achieving a desired goal. It is a mechanism by which an organization deploys its resources in form of men, materials and finance to execute a plan of action that has been laid down to achieve an objective (Okechukwu, 2016). Strategy answer the questions why, when, how and by who? (Imakwu, 2018). In the context of this study, strategy means a laid down plan to be deployed by teachers to improve the academic performance of students in agricultural science. The need for the strategies to improve students' academic performance in agricultural cannot be over emphasized. This is because in the Agbani education zone which is the study area, the vegetation is mixed with forests and savanna vegetation. Also trees like raffia-palms and palm trees are normally found in the area. The study area has a fertile land and most of the soil in the area is humans with farming as their major occupation. This implies that if agricultural students in these study area are adequately trained, they will help to prepare them for further studies in agricultural and entry into agricultural occupations in their area.

In order to prepare these students for further studies in agricultural science and improve their academic performance, a teacher of agricultural science need to employ strategies in making adequate preparation of agricultural science lesson plan, presenting the lesson effectively utilizing instructional materials during lesson presentation, managing the classroom effectively during lesson presentation and evaluating agricultural science lesson effectively, (Akpe, 2019).

Lesson plan is a detailed description of the instructional strategies and learning activities to be performed during the teaching/learning process ([www.open.edu](http://www.open.edu)2021, retrieved, 11/8/21). Lesson planning is the activity which the teacher performs before the actual lesson takes place. Lesson plan serves a guide that a teacher uses every day to determine what the students will learn, how the lesson will be taught as well as how learning to function more effectively in the classroom by giving a detailed outline that they adhere to

during each class. It can be deduced that a teacher without a lesson plan cannot perform effectively and this will invariably affect the students' academic performance. Chibuike (2012) stated that adequate preparation of instruction entails setting objectives to be achieved, deciding on the strategy for achieving the objectives and the activities to be carried. Supporting Orikpe (2013), supporting Chibuike (2012) viewed lesson preparation as the process of deciding what important activities to be down, instructional content, teaching materials and methods necessary for the agricultural science lesson presentation.

Presentation phase of the lesson is when the teacher introduces new information. According to Akpe (2019), agricultural science lesson presentation indicates the techniques, strategies materials and methods of teaching. It refers to effective use of resources, effective use of voices, hand, parts of the body and ability to demonstrate as the need arises. The teacher guides the presentation, but there may be student input or interaction. Ogunyemi (2012) added that lesson presentation should be guided by instructional objectives as well as instructional materials. Instructional materials are materials or equipment that can be in the course of teaching to make the lesson more interesting and meaningful to the learners (Jubril, 2010). In the context of this study, instructional materials include Laboratories (Farm and workshops), pictures, tools, conducive classrooms, textbooks, livestock pens and pastures, laboratory hardware's among others. These materials when appropriately used by employing the right strategies will help to meet the needs of the students who will be future farmers and acquisition of both knowledge and practical skills of the students. This is because according to Orikpe (2013), utilization deals with making appropriate use of needed capabilities in other to perform a task.

On the other hand, management of classroom during lesson presentation involves controlling, organizing and coordinating of instructional activities in order to achieve the stated objectives (Odigbo, 2012). This implies that the teacher is the manager who ensures that human and material resources are effectively deployed and utilized towards the attainment of the instructional objectives. Further, evaluation of agricultural science related strategies is the systematic process of determining the extent to which the instructional objectives are achieved by the students. Eze, (2015) opined that evaluation can be used to determine the prior knowledge of students before the instructional activities. With reference to this study, evaluation is concerned with finding out the extent to which the teaching and learning objectives of agricultural science has been met by the teacher and students. In agricultural science, evaluation could be carried out using such techniques as interviews, objective tests, essay tests and performance tests. This implies that evaluation may be carried a little further to know how competent a teacher is by the school principal.

In the context of this study, the principals of secondary schools are charged with the responsibility of monitoring and evaluating teachers teaching strategies in their schools. Ogbodo (2016) noted that the principal of schools can assess the performance of the teachers to ensure that quality teaching methods, techniques, materials and evaluation procedures are adopted for effective instructional delivery.

In Agbani Education zone, it seems that the strategies are not adequately put in place. This may have contributed to poor perception and performance of students in agricultural science and mass exodus to other subjects. This should not have happened, if agricultural science teachers have employed all the necessary strategies in delivering agriculture science. Agricultural science as a practical oriented subject that needs the

action being done. This is because a child is to think but he must have the information to think with (Enebene, 2012) but unfortunately as noted by Nwangwu (2013), and Udeke (2015) many agricultural science teachers would display few supplied tools and give short notes on their uses towards examination. These shortcomings constitute a hindrance to the development of agricultural science programme in secondary schools and negatively affect the students' academic performance. It is against this background that the need arose to determine the strategies for improving the students' academic performance by agriculture science teachers in Agbani Education zone of Enugu State.

### **Purpose of the Study**

The major purpose of the study was to determine the strategies for improving students' academic performance in agricultural science by teachers in secondary schools in Agbani Education zone of Enugu State. Specifically, the study sought to determine:

1. Lesson plan preparation related strategies for improving students' academic performance in agricultural science by teachers in secondary schools in Agbani Education zone, Enugu State.
2. Presentation of agricultural science lesson related strategies for improving students' academic performance in agricultural science by teachers in secondary schools in Agbani Education zone, Enugu State.
3. Utilization of instructional materials related strategies for improving students' academic performance in agricultural science by teachers in secondary schools in Agbani Education zone, Enugu State.
4. Management of classroom related strategies for improving students' academic performance in agriculture science by teachers in secondary schools in Agbani Education zone, Enugu State.
5. Evaluation of agricultural science instruction related strategies for improving students' academic performance in agricultural science by teachers in secondary schools in Agbani Education zone, Enugu State.

### **Research Questions**

The following research questions guided the study:

1. What are the lesson plan preparation strategies for improving students' academic performance in agricultural science by teachers in secondary schools in Agbani Education zone, Enugu State?
2. What are the presentation of agricultural science lesson related strategies for improving students' academic performance in agricultural science by teachers in secondary schools in Agbani Education zone, Enugu State?
3. What are the utilization of instructional materials related strategies for improving students' academic performance in agricultural science by teachers in secondary schools in Agbani Education zone, Enugu State?
4. What are the management of classroom related strategies for improving students' academic performance in agricultural science by teachers in secondary schools in Agbani Education zone, Enugu State?
5. What are the evaluation of agricultural science instruction related strategies for improving students' academic performance in agricultural science by teachers in secondary schools in Agbani Education zone, Enugu State?

## Hypotheses

The following null hypothesis tested at 0.05 level of significance guided the study:

- H0<sub>1</sub>: There is no significant difference between the mean ratings of teachers and principals on the lesson plan preparation related strategies for improving students' academic performance in agricultural science by teachers in secondary schools in Agbani Education zone, Enugu State.
- H0<sub>2</sub>: There is no significant difference between the mean ratings of teachers and principals on the presentation of agricultural science lesson related strategies for improving students' academic performance in agricultural science by teachers in secondary schools in Agbani Education zone, Enugu State.
- H0<sub>3</sub>: There is no significant difference between the mean ratings of teachers and principals on the utilization of instructional materials related strategies for improving students' academic performance in agricultural science by teachers in secondary schools in Agbani Education zone, Enugu State.
- H0<sub>4</sub>: There is no significant difference between the mean ratings of teachers and principals on the utilize management of classroom related strategies for improving students' academic performance in agricultural science by teachers in secondary schools in Agbani Education zone, Enugu State.
- H0<sub>5</sub>: There is no significant difference between the mean ratings of teachers and principals on the evaluation of agricultural science instruction related strategies for improving students' academic performance in agricultural science by teachers in secondary schools in Agbani Education zone, Enugu State.

## Research Method

A descriptive survey design was adopted for the study. Survey research design according to Nworgu (2015) is one in which a group of people or items are studied by collecting and analyzing data from only a few people or items considered to be representative of the entire group. This design was used because the study collected data from agricultural science teachers and principals in secondary schools.

The study was conducted in Agbani Education Zone. Agbani Education Zone is made up of forty-five (45) public secondary schools located in the three local government areas. These local government areas are Enugu South, Nkanu West and Nkanu East.

The population for the study comprised of 73 agricultural science teachers and 45 principals in Agbani Education zone totaling 118 (Source: Post Primary School Management Board, Enugu (PPSMB), 2021). No sampling was done due to the manageable size of the population. A self structured questionnaire was used as instrument for data collection. The questionnaire contained a total of 47 structured items on the strategies for improving students' academic performance by agricultural science teachers in secondary schools in Agbani Education zone of Enugu State. Each strategy item had a four point response scale of strongly agree (SA), agree (A), disagree (D) and strongly disagree (SD) with numerical values of 4, 3, 2, 1 assigned to them respectively.

The instrument was subjected to face validation by two experts from the Department of Technology and Vocational Education (Agricultural Education) and one from Measurement and Evaluation from Department of Mathematics and Computer Science Education all from Faculty of Education, Enugu State



University of Science and Technology, Enugu. They validated the instrument to ensure the appropriateness of the measuring instrument and that the instrument was structured to address the purpose of the study (Uzoagulu, 2011). The comments of the validators were used to modify the final instrument used for data collection.

The reliability of the instrument was determined by using Cronbach Alpha reliability method to determine the internal consistency of the instrument. The cluster yield a coefficient reliability of 0.73, 0.78, 0.74, 0.72, 0.71 respectively and a grand coefficient index of 0.73 indicating that the instrument was reliability and suitable for data collection for the study.

A total of 118 copies of the questionnaire was distributed to the respondents with the help of three guided research assistants. These assistants were briefed by the researcher on how to administer the instrument to the respondents. All the 118 copies of the questionnaire were properly filed and returned, giving a return rate of 100%. It was these properly filled questionnaire that was used for data analysis.

The data collected was analyzed using weighted mean with standard deviation to answer the research questions. The t-test was used for testing the null hypothesis at 0.05 level of significance. The decision was based on the principle of real limits of the mean thus:

Strongly agree	-	3.50 – 4.00
Agree	-	2.50 – 3.49
Disagree	-	1.50 – 2.49
Strongly disagree	-	1.00 – 1.49

The null hypothesis was rejected if the t-calculated was less than the t-critical, but accepted if the t-calculated exceeds the t-critical.

## **Result**

The result obtained from the data analyzed are presented in tables below according to the research questions and hypotheses that guided the study.

### **Research Question 1**

What are the lesson plan preparation strategies for improving students' academic performance in agricultural science by teachers in secondary schools in Agbani Education zone, Enugu State?

**Table 1**

**Mean ratings and standard deviation of respondents on the lesson plan preparation strategies for improving students' academic performance in agricultural science by teachers in secondary schools in Agbani Education zone, Enugu State.**

S/N	Lesson Plan Preparation Related Strategies	Respondents	SD	Decision
		N = <u>118</u> <u><math>\bar{x}</math></u>		
1	Setting objectives to be achieved	3.63	0.60	SA
2	Stating the strategies for achieving the objectives	3.26	0.60	A
3	Determining the skill to be empathized	3.32	0.62	A
4	Deciding on instructional content	3.22	0.66	A
5	Stating appropriate teaching materials	3.28	0.61	A
6	Stating appropriate entry behaviour	3.31	0.58	A
7	Stating appropriate attitude to be demonstrated	3.50	0.60	SA
8	Stating appropriate teaching methods	3.47	0.62	A
9	Formulating enough performance assessment (evaluation)	3.12	0.75	A
10	Stating the steps for the motivation of the students	3.59	0.67	SA
11	Stating assignment for the next lesson and general summary of the lesson.	3.55	0.70	SA
<b>Grand Cluster Value</b>		<b>3.15</b>	<b>0.62</b>	<b>A</b>

Note: SA = Strongly Agree, A = Agree,  $\bar{x}$  = Mean, SD = Standard Deviation.

Data presented in Table 1 above shows that the items denoted by 1, 7, 10 and 11 were strongly agreed to by the respondents as lesson plan preparation related strategies. They had mean ratings of 3.63, 3.50, 3.59, and 3.55 respectively. Other items had mean ratings from 3.12 – 3.47 indicating that these items were agreed to by the respondents. With a grand mean of 3.15 and standard deviation of 0.62, it shows that all the items were agreed to be lesson plan preparation related strategies for improving students' academic performance in agricultural science in secondary schools in Agbani Education zone, Enugu State.

**Table 2**

**Summary of t-test analysis of mean ratings of teachers and principals on the on the lesson plan preparation strategies for improving students' academic performance in agricultural science by teachers in secondary schools in Agbani Education zone, Enugu State.**

Respondents	N	T	Df	Sig. detailed	Mean difference	Std. Error difference	Decision
Teachers	73	0.849	116	0.397	0.26502	0.31232	NS
Principals	45						

Table 2 shows that t-value at 0.05 level of significance and 116 degree of freedom for the 11 items is 0.849 with significant value of 0.397. Since the significant value of 0.397 is more than the 0.05 level of significant, the null hypothesis is not significant. This means that there is no significant difference with respect to the 11 items on the mean ratings of teachers and principals on the lesson plan preparation

strategies for improving students' academic performance in agricultural science by teachers in secondary schools in Agbani Education zone, Enugu State. Therefore the null hypothesis of no significant difference was not rejected.

## Research Question 2

What are the presentation of agricultural science lesson related strategies for improving students' academic performance in agricultural science by teachers in secondary schools in Agbani Education zone, Enugu State?

**Table 3**

**Mean ratings and standard deviation of respondents on the presentation of agricultural science lesson related strategies for improving students' academic performance in agricultural science by teachers in secondary schools in Agbani Education zone, Enugu State**

S/N	Presentation Of Agricultural Science Related Strategies	Respondents N = <u>118</u> $\bar{X}$	SD	Decision
12	Use of instructional materials	3.52	0.61	SA
13	Use of questioning to facilitate creative thinking	3.76	0.45	SA
14	Use of real life situations	3.69	0.50	SA
15	Use of group discussion among the students	3.29	0.76	SA
16	Use of role playing	3.37	0.66	A
17	Use of	3.54	0.62	A
18	Use of	3.47	0.56	SA
19	Use of feedback	3.40	0.60	A
20	Use of laboratory for practical teaching	3.63	0.58	SA
21	Use of emerging technologies	3.60	0.54	SA
	<b>Grand Cluster Value</b>	<b>3.53</b>	<b>0.59</b>	<b>SA</b>

The data presented in Table 3 shows that the items denoted by 12, 13, 14, 17, 20 and 21 were strongly agreed to by the respondents for improving students' academic performance in secondary school in Agbani Education zones of Enugu State. These items had mean ratings of 3.52, 3.76, 3.69, 3.54, 3.63 and 3.60 respectively. Other items had mean ratings ranging from 3.29, 3.37, 3.47, and 3.40 indicating that these items were agreed to. With a grand cluster value of 3.53 and standard deviation of 0.59 it indicated that all the times were strongly agreed to by the respondents for improving students' academic performance in agricultural science of secondary school in Agbani Education zones of Enugu State.

## Hypothesis 2

There is no significant difference in the mean ratings of teachers and principals on the presentation of agricultural science lessons related strategies for improving students' academic performance in agricultural science of secondary school in Agbani Education zones of Enugu State.



**Table 4**

**Summary of t-test analysis of mean ratings of teachers and principals on the on the presentation of agricultural science lessons related strategies for improving students' academic performance in agricultural science of secondary school in Agbani Education zones of Enugu State.**

Respondents	N	T	Df	Sig. detailed	Mean difference	Std. Error difference	Decision
Teachers	73	0.305	116	0.439	1.74275	0.40482	NS
Principals	45						

Table 4 above shows that the t-value at 0.05 level of significance and 116 degree of freedom for the 10 items is 0.305 with a significant value of 0.439. Since the significant value of 0.439 is more than 0.05 level of significance, the null hypothesis is to significant. This means that there is no significant difference between the mean ratings of teachers and principals on the presentation of agricultural science lessons related strategies for improving students' academic performance in agricultural science of secondary school in Agbani Education zones of Enugu State with respect to the 10 items. Hence the null hypothesis of no significant difference was not rejected.

### Research Question 3

What are the utilization of instructional materials related strategies for improving students' academic performance in agricultural science by teachers in secondary schools in Agbani Education zone, Enugu State?

**Table 5**

**Mean ratings and standard deviation of respondents on the utilization of instructional materials related strategies for improving students' academic performance in agricultural science by teachers in secondary schools in Agbani Education zone, Enugu State.**

S/N	Utilization of instructional Materials Related Strategies	Respondents N = $\frac{118}{x}$	SD	Decision
22	Selection of relevant instruction materials	3.68	0.71	SA
23	Improvise instructional materials when necessary	3.59	0.88	SA
24	Use audio-visual instructional material where necessary	3.39	1.07	A
25	Use local resource person and establishments	3.38	1.01	A
26	Use instructional materials at the right time.	3.40	1.06	A
27	Use computer aided instruction	3.42	0.98	A
28	Allow students to use the available instructional materials for skill acquisition.	3.47	0.92	A
29	Use emerging instructional facilities	3.43	1.02	A
30	Use multimedia instructional facilities	3.27	1.05	A
	<b>Grand Cluster Value</b>	<b>3.44</b>	<b>0.96</b>	<b>A</b>

Regarding Table 5 above, items 22 and 23 had mean ratings of 3.68 and 3.59 respectively indicating that the respondent strongly agreed to these items. Similarly 3.39, 3.38, 3.40, 3.47, 3.43, and 3.27 were obtained for the rest of the items (items 24 – 30) showing that the itemized strategies were agreed to by the respondents as utilization of instructional materials related strategies. With a grand cluster mean value of 3.44 and standard deviation of 0.96 indicates that all the itemized strategies were agreed to by the respondents as utilization of instructional material related strategies for improving students' academic performance in agricultural Science on secondary schools in Agbani Education zone, Enugu State.

### Hypothesis 3

There is no significant difference in the mean ratings of teachers and principals on the utilization instructional material for related strategies for improving students' academic performance in agricultural science of secondary school in Agbani Education zones of Enugu State.

**Table 6**

**Summary of t-test analysis of mean ratings of teachers and principals on the utilization of instructional materials related strategies for improving students' academic performance in agricultural science of secondary school in Agbani Education zones of Enugu State.**

Respondents	N	T	Df	Sig. detailed	Mean difference	Std. Error difference	Decision
Teachers	73	0.862	116	0.103	2.65672	0.38715	NS
Principals	45						

The result of t-test analysis presented in Table 6 shows that the f-value at 0.05 level of significance and 116 degree of freedom for the 9 items is 0.862 with a significant value 0.103 is more than the 0.05 level of significant the null hypothesis is not significant. The implication is that there is no significant difference with regards to the 9 items on the mean ratings of teachers and principals on utilization of instructional materials in related strategies in agricultural science for improving the students' academic performance in secondary schools in Agbani Education zone in Enugu State. The null hypothesis of no significant difference was therefore not rejected.

### Research Question 4

What are the management of classroom related strategies for improving students' academic performance in agricultural science by teachers in secondary schools in Agbani Education zone, Enugu State?

**Table 7**

**Mean ratings and standard deviation of respondents on the management of classroom related strategies for improving students' academic performance in agricultural science by teachers in secondary schools in Agbani Education zone, Enugu State.**

S/N	Management of Classroom of Agricultural Science Related Strategies	Respondents N = $\frac{118}{\bar{x}}$	SD	Decision
31.	Proper management of classroom	3.63	0.58	SA
32.	Use of rewards and punishment	3.60	0.54	SA
33.	Using time allocated for the lesson period properly	3.46	0.64	A
34.	Controlling students behaviours	3.58	0.60	SA
35.	Using questioning to get the students focused	3.54	0.60	SA
36.	Establish a climate of mutual respect	3.37	0.68	A
37.	Giving honest responses to improve their weak areas	3.23	0.73	A
38.	Insist on high quality by having students polish their work	3.53	0.67	A
<b>Grand Cluster Value</b>		<b>3.49</b>	<b>0.63</b>	<b>A</b>

Table 7 above shows that out of eight (8) management of classroom related strategies itemized, five (5) were strongly agreed to by the respondents. The items are 31, 32, 34, 35 and 38 with mean ratings of 3.63, 3.60, 2.58, 3.54 and 3.53 respectively. The remaining items 33, 36 and 37 were agreed to find by the respondents with mean ratings of 3.46, 3.37, and 2.23 respectively.

A grand mean of 3.49 and standard deviation of 0.63 and obtained for all the items, indicated that all the itemized management strategies were generally agreed to by the respondents for related strategies for improving students' academic performance in agricultural Science on secondary schools in Agbani Education zone, Enugu State.

#### **Hypothesis 4**

There is no significant difference in the mean ratings of teachers and principals on the management of classroom related strategies for improving students' academic performance in agricultural science of secondary school in Agbani Education zones of Enugu State.

**Table 8**

**Summary of t-test analysis of mean ratings of teachers and principals on the management of classroom related strategies for improving students' academic performance in agricultural science of secondary school in Agbani Education zones of Enugu State.**

Respondents	N	T	Df	Sig. detailed	Mean difference	Std. Error difference	Decision
Teachers	73	0.784	116	0.384	2.68002	0.39506	NS
Principals	45						

The summary of Table 8 above shows that the t-value at 0.05 level of significance and 116 degree of freedom for the 8 items is 0.784 with a significant value of 0.384. Since the significant value of 0.384 is more than the 0.05 level of significance, the null hypothesis is not significant. This implies that there is no significant difference between the mean ratings of teachers and principals on the management of classroom related strategies for improving the students' academic performance in agricultural science in secondary schools in Agbani Education zone in Enugu State, Therefore, the null hypothesis was not rejected.

### Research Question 5

What are the evaluation of agricultural science instruction related strategies for improving students' academic performance in agricultural science by teachers in secondary schools in Agbani Education zone, Enugu State?

**Table 9**

**Mean ratings and standard deviation of respondents on the evaluation agricultural science instruction related strategies for improving students' academic performance in agricultural science by teachers in secondary schools in Agbani Education zone, Enugu State?**

S/N	Evaluation of Agricultural Science Related Strategies	Respondents $N = \frac{118}{\bar{x}}$	SD	Decision
39	Use of formative evaluation	3.60	0.88	SA
40	Use of assignments	3.44	0.95	A
41	Use of projects	3.55	0.91	SA
42	Use of quiz	3.22	1.35	A
43	Use of impromptu tests	3.42	0.98	SA
44	Use of performance test for measuring manipulative skills	3.50	0.94	A
45	Use of reliable tests	3.31	1.1	A
46	Use of summative evaluation	3.56	0.87	SA
47	Use of questioning during lessons	3.55	0.89	SA
	<b>Grand Cluster Value</b>	<b>3.46</b>	<b>0.98</b>	<b>A</b>

The data presented in Table 9 above shows that items donated by 39, 41, 43, 46 and 47 were strongly agreed by the respondents as strategies for evaluation agricultural science instruction related strategies for improving students' academic performance in agriculture science by teachers in secondary schools in Agbani Education zone, Enugu State? Their means range from 3.60, 3.55, 3.50, 3.56 and 3.55 respectively; other items had means ratings ranging from 3.31 to 3.46 showing that these items were equally agreed to by the respondents. With a grand mean of 3.46 and standard deviation of 0.89 indicated that all the itemized were strongly agreed by the respondents for improving students' academic performance in agriculture science by teachers in secondary schools in Agbani Education zone, Enugu State?

## Hypothesis 5

There is no significant difference between the mean responses of teachers and principals on the evaluation agricultural science instruction related strategies for improving students' academic performance in agriculture science by teachers in secondary schools in Agbani Education zone, Enugu State?

**Table 10**

**Summary of t-test analysis of mean ratings of teachers and principals on the evaluation agricultural science instruction related strategies for improving students' academic performance in agricultural science by teachers in secondary schools in Agbani Education zone, Enugu State?**

Respondents	N	T	Df	Sig. detailed	Mean difference	Std. Error difference	Decision
Teachers	73	0.977	116	0.571	2.93130	0.18347	NS
Principals	45						

Table 10 above shows that t-value at 0.05 level of significance and 116 degree of freedom for the 9 items is 0.977 with a significant value of 0.571. Since the significant value of 0.571 is more than the 0.05 test of significance, the null hypothesis is not significant. This indicates that there is no significant difference between the mean ratings of teachers and principals on the evaluation agricultural science instruction related strategies for improving students' academic performance in agriculture science by teachers in secondary schools in Agbani Education zone, Enugu State. Hence the null hypothesis was not rejected.

## Findings

The following findings were made based on the result of the data analyzed.

1. The respondents agreed to all the itemized lesson plan preparation related strategies for improving the students' academic performance in agricultural science in secondly schools in Agbani Education zone, Enugu State. These items included: setting objectives to be achieved, setting the strategies for achieving the objectives.
2. There was no significant difference with respect to the 12 items on the mean ratings of teachers and the principal on the lesson plan preparation related strategies for improving the students' academic performance in agricultural science in secondly schools in Agbani Education zone, Enugu State.
3. The respondents strongly agreed to presentation of agricultural science lesson related strategies for improving the students' academic performance in agricultural science in secondly schools in Agbani Education zone, Enugu State. These items are use of reverent instructional materials, use of questioning to facility creative thinking, use of real life situation among others.
4. There was no significant difference between the mean ratings of teachers and principals on the presentation of agricultural science lesson related strategies for improving the students' academic performance in agricultural science in secondly schools in Agbani Education zone, Enugu State with respect to the 10 items tested.
5. The respondents agreed to all the itemized utilization of instructional materials related strategies. These items are selection of relevant instructional, improvise instructional materials when necessary, use of audio-visual instructional materials when necessary among others.



6. There was no significant difference in the mean ratings of teachers and principals with respect to the 9 items on the utilization of instructional materials related strategies for improving the students' academic performance in agricultural science in secondly schools in Agbani Education zone, Enugu State..
7. All the respondents agreed to all the itemized management of classroom related strategies to a high extent. These utilize strategies are proper arrangement of the class, use of rewards and punishments, using time allocation for the lesson period properly among others.
8. There was no significant difference in the mean ratings of teachers and principals on the management of classroom related strategies for improving the students' academic performance in agricultural science in secondly schools in Agbani Education zone, Enugu State with respect to all the items.
9. The respondents agreed to all the evaluation related strategies, use of agricultural science instruction related strategies for improving the students' academic performance in agricultural science in secondly schools in Agbani Education zone, Enugu State.
10. The opinions of the respondents were not significant and thus their status had no significant influence regarding the evaluation related strategies for improving the students' academic performance in agricultural science in secondly schools in Agbani Education zone, Enugu State.

## Discussion

The result of the study on research question one showed that all the itemized lesson plan preparation related strategies were agreed to by the respondents. These items had a grand mean of 3.15 and standard deviation of 0.62. The lesson plan preparation strategies include setting objectives to be achieved, stating the strategies for achieving the objectives, determining the skills to be emphasized, deciding on the instruction content, stating the appropriate teaching materials, stating the appropriate entry behaviour, stating the appropriate attitude to be demonstrated, stating the appropriate teaching methods, stating the steps for the motivation of the students, stating the evaluation for the lesson and summarizing the important parts of the lesson. These findings are in line with Chibuike (2012) that adequate preparation of instruction (lesson plan) entails setting objectives to be achieved, deciding on the strategy for achieving the objective and Orikupe (2013) added stating instructional content, teaching materials and materials to be used. This implies that agricultural science teachers should employ these strategies for in lesson plan preparation before presentation agricultural science.

The null hypothesis tested on lesson plan preparation strategies showed no significant different between the mean ratings of teachers and principals regarding the lesson plan preparation related strategies. The non-significant difference showed that the respondents were not influenced with respect to the responses to these items.

The findings in research question 2 showed that the respondents strongly agreed to all the lesson presentation related strategies for improving the students' academic performance in agricultural science. These items are use of relevant instructional materials, use of questioning to facilitate creative thinking, use of real life situations, use of group discussion among the students, use of role of playing, use of

reinforcement, use of planned repetition, use of feedback, use of laboratory for practical learning and use of world examples. This is in line with Tunde (2010) who opined that the success of a teacher in the classroom depends on his knowledge and method of teaching. Moore (2014) supporting Tunde (2010) stated that the teaching technique (lesson presentation) employed by the teacher in impacting information to the students may have effect in creating favourable or unfavourable impression about agriculture in the minds of the students. This implies that the teacher of agricultural science to improve the students' academic performance must get the students to be active, mentally and physical during lesson presentation through handling objects, observing facts, arrange materials and so as to acquire the knowledge and skill they need.

The null hypothesis tested on lesson presentation showed no significant difference in the mean ratings of teachers and principals. The non-significant difference may be as a result that since agriculture is a practical oriented course, the teacher and the students should do more of doing (demonstration) than talking.

The result on research question three showed that all the itemized utilization of instructional material related strategies were all agreed by the respondents for improving the students' academic performance in agricultural science in secondly schools in Agbani Education zone. These items had a grand mean of 3.44 and standard deviation of 0.96. These items are selection of relevant instructional materials, improvise instructional material when necessary, use audio-visual instructional material where necessary, use local resource persons and establishments, use instructional material at the right time, use computer aided instruction, allow students to use the available ones, use emerging instructional facilities and use multimedia facilities. This is in line with Ajayi (2011) that noted that instructional material provide the direct interaction of the students with the realities of the social and physical environment. They give initial concepts which are correct, real and complete. Orikpe (2013) made a conclusive statement by pointing out that instructional materials do not only awake zero desires and interest, but provide motivation and stimulation. It can then be deduced that instructional materials supplement the verbal description by which teachers make their points clear so that the students find it easier to acquire more understanding of the topic.

The null hypothesis tested on utilization of instructional materials related strategies showed no significant difference between the mean rating of teachers and principals. The non-significant difference may be as result that the respondents agreed that a dull and stimulating environment without adequate instructional material offers very little learning experience as opposed to an environment in which various all learning facilities are provided; carefully selected and utilized for instructional development.

The findings on research question four showed that all the itemized management of classroom related strategies during agricultural science lesson presentation were highly agreed to by the respondents. They had a grand mean of 3.49 and standard deviation of 0.63. These items are proper arrangement of classroom, use of rewards and punishment, proper use of time allocated for the lesson, controlling student's behaviours, sue of questions to get the students focused, establishment of climate of mutual respect, giving honest response to improve the weak areas, and insisting on high quality by having students polish their work. This, finding is in line with Akpe (2019) who saw a teacher as the classroom leader, whose role to establish an enthusiastic and purposeful work atmosphere that will encourage the students, give them self-assurance and also motivate them. This implies that the way a teacher manages and controls the classroom during

agricultural lesson presentation influences not only the way the students learn but also the perception of the teacher by the students.

The null hypothesis tested on management of classroom related strategies for improving the students' academic performance in agricultural science showed no significant difference. The no significant difference may be as a result that the respondents agreed with the view of Odigbo (2012) that management of instruction in classroom involves controlling, organizing and coordinating instructional activities in order to achieve the objective (academic performance).

The data analyzed in search question 5 showed that all the evaluation of agricultural science instruction related strategies showed that half the items had a grand mean of 3.46 and standard deviation of 0.90 indicating that all these items were agreed by respondents for improving the students' academic performance in agricultural science in secondly schools in Agbani Education zone, Enugu State. These items are the use of formative evaluation, use of assignments, use of projects, quiz, impromptu tests, performance test, reliable tests, summative tests and questioning during lesson. This is in line with Mba and Udegbe (2010) that evaluation include oral and written assessment, objective tests, essay tests and project. In agricultural science instruction, most levitations are done in form of questioning or asking the students to perform an action. This implies that teacher's questions should be directed at ensuring students' active participation and to check their level of comprehension of lesson. A competent teacher of agricultural science should ask questions that can assess different domains of students cognitive, affective and psycho-motor domain.

The null hypothesis tested showed no significant difference on the mean ratings of teachers and principals on the evaluation of agricultural science instruction related strategies on improving the students' academic performance in agricultural science in secondly schools in Agbani Education zone. The non-significant difference may be that the respondents agreed to the view of Akpe (2019) that if teachers could give proper attention to evaluation of agricultural science activities and contents in the school, there will be positive result in increasing students' achievement in agriculture as well as interest to practice it after school. It can then be deduced that the status of the respondents did not affect their responses.

## Conclusion

Academic performance is the ability to master a diverse set of skills which extends to achievement outside the classroom. Academic performance illustrates intelligence, curiosity, persistence and qualities attractive to universities and employers. This shows the need for agricultural science teachers to use different various lesson plan preparation related strategies, lesson presentation related strategies, utilization of instructional material related strategies, management of classroom related strategies and evaluation of students related strategies in teaching to bring about desirable changes (improvement) in the students' academic performance. This is because when the students are academically sound in agricultural science, it will aid the students to transfer positively what they learned in school to real life situations.

## Recommendations

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

1. Agricultural science teachers should use lesson plan preparation related strategies, presentation of agricultural science lesson related strategies, utilization of instructional materials related strategies, management of classroom related strategies and evaluation of agricultural science instruction related strategies in teaching students in the secondary school.
2. School administrators should supervise and ensure that agricultural science teachers use the identified strategies to a high extent for improvement in the academic performance of students.

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