



Instructional-based Strategies for Stimulating Secondary School Students Career Interest in Agriculture in Bayelsa State

Ugo, Panebi (Ph.D) & *Obiyai, Koku K. (Ph.D)

**Department of Vocational and Technology Education,
Niger Delta University,
Wilberforce Island, Bayelsa State, Nigeria**

***Correspondence: +2348033890573/obiyaikoku@yahoo.com**

ABSTRACT

The article defined the influence of instructional-based strategies for stimulating secondary school students' career interest in agriculture in Bayelsa State. The research design used was descriptive. The study population comprised four hundred and fifteen agricultural science teachers and management staff of one hundred and ninety secondary schools in the state. No Sampling was done because the population number was manageable. Three research questions and two hypotheses were used to guide the study. The instrument used for data collection was titled "Instructional-based Strategies for stimulating students career interest an Agriculture Questionnaire (ISSSCIAQ) while data collected were analyzed by descriptive statistics for research questions and t-test was used in testing the null hypothesis. The Findings among others revealed that teacher's competency-based, motivational based and instructional-based strategies were required for stimulating students' career interest in agriculture. Likewise, that there is no significant difference between agricultural science teachers and management staff on the three strategies mentioned above. Based on the Findings, it was recommended that government should recruit competent and professional teachers of agriculture to take agricultural science instructions in our secondary schools.

Keywords: agriculture, career interest strategies, motivation, instructional strategies.

INTRODUCTION

It is the desire of every society to achieve a sustainable level of socio-economic development through quality education at early childhood, primary, secondary and tertiary education level. Secondary education occupies an important position in the educational system. According to Lucas and Olaniyan (2008), secondary school is that level of education where children receive basic education that enhances their advancement to higher professional and academic pursuit, the federal Republic of Nigeria (2014) in the National Policy on Education described secondary school as education children receive after primary education and before tertiary stage. Secondary school according to Brickman (2009) is an education immediately after elementary schooling. It begins generally at about the age of eleven (11) years and continues for the next six (6) years. Eya and Chukwu (2012) observed a downward trend in the quality of instruction in public secondary schools, evidence by poor students work and poor performance in external examinations. Some of the vocational subjects taught to students at secondary school level is Agricultural science.

Agricultural science is the art and science of application of basic scientific knowledge to the cultivation of the soil, breeding of animals and better production of crops and livestock for the use of man (Ekemode, 2000). The Caribbean Examination Council (2010) also described Agricultural Science as a

subject that allows students to develop knowledge and understanding of the interaction between the component parts of agriculture, and the scientific principles that explain processes that take place when agricultural inputs are transformed into outputs. The concept of agriculture as a science extends beyond the farm as it may also be conducted in the laboratory, classroom and any other enabling environment at primary, secondary and post-secondary levels.

With regards to secondary school, Agricultural Science deals with the teaching of how to grow crops, rear animals or livestock and perform other operations that ensure expansion of knowledge in the subject at Junior and Senior secondary school levels. At the secondary school level, Baba (2010) highlighted some of the main objectives of the teaching and learning of agricultural science to include: enabling students acquire basic knowledge and practical skills in agriculture, preparing students for further studies in agriculture and stimulating and sustaining students' interest in agriculture. It is the-opinion of the authors that only trained agricultural science teachers should be made to teach the subject. This is because they have all it takes to make the subject look interesting.

Career interest is mostly seen as a course of successive situations that make up a person's occupation. It is a process used to describe an individual's life time of learning and work. This position was shared by Akinloye (1998), who defined career as the sequence of positions occupied by a person during the course of a life time. In the opinion of Shertzer and Stones (1987), career interest is the sequence of the major positions occupied by a person throughout his pre-occupational life, including work related roles, such as those of an employee, pensioner, family and civil roles. Education and work are inseparable and so Watts (1993) pointed out that one works to learn, as one learns to work.

Onanuga (1991) identified four steps that are required to develop interest in a career which include: knowing about available opportunities; the source of information; knowing important fact about jobs; and how to make a choice through stimulation.

To stimulate- means- to cause somebody to become interested in or excited about something. According to, San Diego City College (2013), efforts to stimulate students' career must include: introducing stimulating ideas about the subject, inspiring students to set and achieve goals which really challenge them, stimulating students to intellectual efforts beyond that required by most courses and demonstrating the importance and significance of that subject matter.

Strategy refers to a plan of action designed to achieve a particular goal. In the view of Afro (1999), strategy is a broad term of activities to achieve objectives. In the context of this study, strategies are important frameworks that can be adopted to encourage student's career interest in Agriculture in secondary and tertiary institutions. The report of United Nations Education, Science and Cultural Organization [UNESCO, 2000) identified three major strategies that stimulate students' interest in school subjects which include: the quality and competence of the teachers, motivational incentives and instructional strategies. Therefore, one could link the present poor career interest of students in agriculture to incompetence of the teachers, motivational incentives to stimulate the students' career interest and obsolete instructional strategies in schools. It is based on this bedrock that this study was carried out to investigate instructional-based strategies for stimulating secondary school students' career interest in Agriculture Science.

Purpose of Study

The main purpose of study is to investigate instructional-based strategies for stimulating secondary school students' career interest in Agriculture in Bayelsa State, Nigeria. The study specifically identified:

- i. Teachers' competency-based strategies for stimulating students' career interest in Agricultural science,
- ii. Motivational-based strategies for stimulating students' career interest in agricultural science.
- iii. Instructional-based strategies for stimulating students' career interest in agricultural science.

Research Questions

Based on the specific purposes of the study, the study answered the following research questions:

- i. What are the-opinions of Agricultural Science teachers and school management on teachers' competency-based strategies for stimulating students' career interest in agricultural science?
- ii. What are the Opinions of Agricultural Science teachers and school management on motivational-based strategies for stimulating students' career interest in agricultural science?

- iii. What are the opinions of Agricultural Science teachers and school management on instructional-based strategies for stimulating students' career interest in agricultural science?

Hypotheses

- i. There is no significant difference in the mean ratings of teachers of agricultural science and school management on teachers' competency-based strategies for stimulating students' career interest in agricultural science?
- ii. There is no significant difference in the mean ratings of teachers of agricultural science and school management on motivational-based strategic for stimulating students' career interest in agricultural science.

METHODOLOGY

The study adapted a descriptive survey-design. According to Ali (2007), a descriptive survey design is a method of data collection using questionnaires to collect data from a sample that has been selected to represent a population to which the findings of the data analysis can be generalized. The population for the study was 415 subjects, made up of all the 83 principals, 83 vice principals and 249 teachers of agricultural science in public secondary schools in Bayelsa State. Due to the manageable size, "the entire population of 415 subjects (166 school management and 249 agricultural science teachers.) were involved in -the study; therefore, there was no sampling.

The instrument for data collection for the study was a 35-item structured questionnaire titled: "Instructional-based Strategies for Stimulating Students' career interest in Agriculture Questionnaire (ISSSCIAQ)". The questionnaire was structured on a 4-point Likert scale of Strongly Agree, (SA); Agree (A); Disagree (D) and Strongly Disagree (SD) with corresponding rating values of 4, 3, 2 and 1 respectively.

The instrument was given to three experts in Faculty of Education, Niger Delta University for face and content validity. The reliability of I-SSSCIAQ was done using Cronbach Alpha of Correlation and a value of 0.88 was obtained.

The researchers administer 415 copies-of questionnaire with the help of five research assistants. 398 copies were retrieved-representing 95.5%. The data collected was analyzed by descriptive statistics (mean) while;-t-test statistics was used for testing the null hypotheses at 0.05 level of significance. Mean decision point indicating 2.50and above was considered agreed while items with mean values less than 2.50 was regarded as Disagreed.

On the null hypotheses tested, the hypothesis of no significant difference was accepted for items whose t-calculated (t-cal) values were less than the t-critical value of 1.96 at 0.05 level of significance.

RESULTS

Research Question One

What are the opinions of Agricultural Science teachers and school management on teachers' competency-based strategies for stimulating students' career interest in agricultural science?

The data answering research question one are presented in Table 1.

Table 1: Mean ratings of the Responses of Teachers of Agricultural Science and school Management on Teachers' Competency-based Strategies for ...Stimulating Students', Career Interest in Agriculture. (N = 398).

S/N	Item statement	X	X	Means Average	SD	RMK
1	Having experience and competence in handling instruction in agricultural Science.	3.63	3.57	3.60	0.72	A
2	Recruiting qualified teachers that are competent to handle instruction in Agricultural Science.	3.41	3.67	3.54	0.69	A
3	Frequent in service or expertise training of the teachers on response professional skills for effective teaching	3.76	3.73	3.75	0.77	A
4	Making Agricultural science teachers handle classes according to their level of experience.	3.50	3.73	3.61	0.76	A
5	Support conference, workshop and seminar to boost their competence and expertise in teaching	3.53	3.55	3.54	0.74	A
6	Competency in career counseling to agricultural science student	3.56	3.51	3.54	0.84	A
7	Specification of future job requirement to form the basis for training and developments of teachers	3.57	3.69	3.63	0.80	A
8	Demonstrating the required ability and skill to avoid loss of interest by students.	3.43	3.44	3.43	0.76	A
9	Teach with the required competence to increase students' satisfaction in learning agricultural science.	3.41	3.49	3.45	0.71	A
10	Display required teaching experience to students' interest in learning agric. science.	3.33	3.46	3.40	0.80	A
	Grand Mean Response Scores	3.51	3.58	3.54	0.76	A

Note: X_T = Mean of Teachers; X_M = Mean of school management, A – Agreed

The data presented in Table 1 showed that the mean average of the responses of the respondents on the 10 items in the table ranged from 3.40 to 3.75 which are all greater than the cut-off point value of 2.50 on 4 point, ratings- scale. This indicated that the 10 identified items in the Table are teachers' competency-based strategies for stimulating students' career interest in agricultural science. The standard deviation of the 10 items ranged from 0.69 to 0.84 which implied that the responses of the respondents are close to one another and the mean.

Hypothesis One

H_{01} : There is no significant difference 'in the mean ratings of teachers of agricultural science and school management on teachers' competency-based strategies for stimulating students' career interest in agricultural science?

The data for testing hypothesis one are presented in table 2

Table 2: t-test statistics of the, Response of Agricultural Science and School management on Teachers competency-based Strategies for Stimulating students' Career Interest in Agricultural Science.

S/N	Group	N	X	SD	DF	t-cal	t-critical	Decision
1	Agric Science Teachers	241	3.51	0.54				
					396	0.87	1.96	NS
2	Secondary School Management	157	3.58	0.61				

Note: NS = Not Significant; Level of Sig. 0.05

The data presented on the t-test statistics in Table 2 above revealed that the t-test calculated (t-cal) value of 0.87 was less than the t-critical value of 1.96 at 0.05 level of significance. This indicated that there is no significant ($p < 0.05$) difference between the mean ratings of the responses of teachers of agricultural science and school management on teacher's competency-based strategies for stimulating students' career interest in agricultural science. Therefore, the null hypothesis of no significant ($p < 0.05$) difference in the mean ratings of the responses of the two groups of respondents is accepted.

Research Question Two

What are the opinions of Agricultural Science teachers and school management on motivational-based strategies for stimulating students' career interest in agricultural science?

The data for answering research question are presented in Table 3.

Table 3: Mean Ratings of the Responses of Teachers of Agricultural Science and School Management on Motivational-based Strategies for Stimulating Students' Career Interest in Agriculture (N= 398)

S/N	Item Statements	X _T	X _M	Mean Average	SD	RMK
1	Expose students about job careers in agriculture	3.55	3.57	3.56	0.70	A
2	Awarding best graduating students of agricultural science with material gift and prizes	3.60	3.65	3.62	0.68	A
3	Organizing scholarship for best' graduating student of agriculture.	3.39	3.35	3.37	0.82	A
4	Inviting agricultural firms and companies to come to school to sensitize students interest in agriculture	3.44	3.57	3.50	0.69	A
5	Taking students of agricultural science to some notable agricultural farms for excursion.	3.48	3.43	3.45	0.63	A
6	Organize secondary school students into farmers youth club.	3.68	3.48	3.58	0.98	A
7	Maintain a standard school farm for practical experience of the students.	3.44	3.40	3.42	0.96	A
	Encourage and give soft loans to school leavers to practice small scale farming on graduation before admission to institution.	3.50	3.48	3.49	0.88	
	Organize agricultural shows and exhibitions in school on regular basis.	3.57	3.27	3.39	0.84	A
	Invite successful modern farmers as resource persons to come and deliver lecture to, students on lucrativeness of farming.	3.58	3.49	3.53	0.79	A
	Grand Mean Response Scores	3.52	3.47	3.49	0.78	A

Note: X_T = Mean of Teachers; X_M = Mean of school management, A – Agreed; N = Number of Respondents

From the data presented in Table 3 above, it was revealed that the mean average of the responses of the respondents the 10 items ranged .from 3.37 to 3.62 which are all greater than the cut-off point value of 2.50 on 4 point ratings scale. This implied that the 10 identified items in the Table are motivational-based strategies for stimulating students' career interest in agricultural science. The standard deviation of the 10 items-ranged from 0.63 to 0.98 which implied that the responses of the respondents are close to another and the mean.

Hypothesis Two

HO2: There is no significant difference in the mean ratings of teachers of agricultural science and school management, on motivational-based strategies for stimulating students' career interest in agricultural science?

The data for testing hypothesis two are presented in Table 4.

Table 4: t-test Statistics of the .Response of Agricultural Science and School Management on Motivational-based Strategies 'for Stimulating Students' Career Interest in Agricultural science

Groups	N	X	SD	DF	t-cal	t-critical	Decision
Agricultural Science Teachers	241	3.52	0.70				
				3.96	1.38	1.96	NS
Secondary School Management	157	3.47	0.63				

Note: NS - Not Significant; Level of Sig. 0.05

The data presented on the t-test statistics in Table 4 above showed that the t-calculated (t-cal) value of 1.38 was less than the t-critical value of 1.96 at 0.05 level of significance. This signified that there is no significant ($p < 0.05$) difference between the mean ratings of the response of teachers of agricultural science and school management on motivational-based strategies for stimulating students' career interest in agricultural science. Hence, the null hypothesis of no significant ($p < 0.05$) difference in the mean ratings of the responses of the two groups of respondents is accepted.

Research Question Three

What are the opinions of Agricultural Science teachers and School management on instructional-based strategies for stimulating students' career interest in agricultural science?

The data for answering research questions three are presented in Table 5.

Table 5: Mean Ratings of the Responses of Teachers of Agricultural Science and School Management on Instructional-based Strategies for Stimulating Students' Career interest in Agriculture.

S/N	Item Statements-	Mean					RMK
		X_T	X_M	Average	SD		
1	Timely provision of instructional materials and facilities to teachers in the school.	3.56	3.51	3.53	0.86	A	
2	Bringing in successful agropreneurs as resource persons to handle some aspects of instruction, in agricultural science.	3.58	3.53	3.56	0.89	A	
3	Adopt the use of student centred instructional strategies for teaching agricultural science.	2.99	2.63	2.82	0.89	A	
4	Provision "of ' -modern instructional- materials sue ICTs for instructional delivery in agricultural science	3.03	2.79	2.91	0.89	A	
5	Encourage teachers of agricultural science to use modern instructional materials 'such as ICTs for teaching in 'the school.	3.56	3.50	3.53	0.93	A	
6	Ensure the effective repair and maintenance of damage instructional facilities in the schools.	3.71	3.40	3.56	0.73	A	
7	Improvising .instructional materials and facilities for .effective teaching in agricultural science.	3.54	3.53	3.53	0.81	A	
8	Invite qualified resource persons in agricultural science for occasional instruction delivery	2.82	2.86	2.84	0.95	A	
9	Ability to improvise instructional materials for effective teaching and learning of agricultural science.	3.31	3.38	3.35	0.88	A	
10.	Ensuring adequate quantity of instructional materials in line with the minimum standard.	3.43	3.65	3.54	0.73	A	
11.	Stock school library with recommended agricultural science textbooks.	3.37	3.46	3.41	0.69	A	
12.	Provide quality training to teachers on the usage of modern instructional facilities.	3.60	3.63	3.61	0.62	A	
13.	Stock agricultural science? laboratory with required and specimen	3.53	3.68	3.60	0.65	A	
14.	Making classrooms more conducive to stimulate students' interest in learning agriculture.	3.51	3.58	3.54	0.63	A	
15.	Allocate adequate period of agricultural science lesson on the time table.	3.50	3.45	3.47	0.64	A	
	Grand Mean Response Scores	3.40	3.37	3.39	0.75	A	

Note: X_T = Mean of Teachers; X_M = Mean of school management, A – Agreed; N = Number of Respondents

The data presented in Table 5 showed that the mean average of the responses of the respondents on the 15 items fable ranged from 12.82 to 360 which are all greater than the cut-off point value of 2.50 on 4 point ratings scale. This indicated that 15 identified items in the Table are teachers' instructional-based strategies for stimulating students' career interest in agricultural science. The standard deviation of the 15 items ranged from 0.62 to 0.95 which implied that responses of the respondents are close to another and the mean.

Hypothesis Three

HO₃: There is no significant difference in the mean ratings of teachers of agricultural science and school management on instructional-based for stimulating students' career interest in agricultural science?

The data for testing hypothesis three are presented in Table 6.

Table 6: **t- test statistics of the Response of Agricultural Science and School Management on Instructional -based Strategies for Stimulating Students¹ Career Interest In Agricultural Science Stimulating students' Career Interest in Agricultural Science**

S/N	Groups	N	X	SD	DF	t-cal	t-critical	Decision
1	Agric Science Teachers	241	3.40	0.55				
					396	097	1.96	NS
2	Secondary School Management	157	3.47	0.60				

Note: NS = Not significant, Level of Sign 0.05

The data presented on the t-test statistics in Table 6 above showed that the t-calculated (t-cal) value of 0.97 was less than the t-critical value of 1.96 at 0.05 level of significance. This indicated that there is no significant (p<0.05) difference between the mean ratings of the responses of teachers of agricultural science and school management on instructional-based strategies for stimulating students' career interest in agricultural science. Therefore, the null hypothesis of no significant (p<0.05) difference in the mean ratings of the responses of the two groups of respondents is accepted.

DISCUSSION OF FINDINGS

This study identified ,10 teachers' competency-based strategies for stimulating secondary school students' career interest in agricultural science which include having experience in handling instruction in Agricultural science, making agricultural science teachers handle classes according to their level of experience, competency in career counseling to agricultural science student, specification of future job requirements to form the basis for training and developments of teachers, support conferences, workshop and seminars for teachers of Agricultural science to boost their competence and expertise in teaching, demonstrating the required ability and skill to avoid loss of interest by students and teaching with the required competence to increase students' satisfaction in learning agricultural science. This finding corroborated the report of World Bank (2004) that recruitment of quality teachers and in-service or expertise training "of the teachers on professional skills are needed for effective service delivery in their teaching career.

The study identified motivational strategies for stimulating students career interest in agriculture to include; exposing- students about job careers in agriculture, awarding best graduating students of agricultural science with material gifts and prizes, organizing scholarships for best graduating student of agriculture science, taking-students of agricultural science to some notable agricultural farms for excursion; organizing secondary school students into youth farmers club, maintaining a standard school farm for practical experience as well as and organizing agricultural shows and exhibitions in schools on regular basis among others. The findings of this study agreed with that of Agha (2016) who found that motivational strategies such as award of scholarships, exposure of students to work-based learning and industry, material gifts and prizes, excursion and field trips as motivational incentives for stimulating interest for vocational education and agriculture is one.

The findings of this study identified instructional-based strategies for stimulating secondary school students' career interest in agricultural science to include timely provision of modern instructional materials and facilities to teachers and the school, adopting the use of student-centered instructional

materials such as ICTs for instructional delivery in agricultural science, ensuring effective repair and maintenance of-damage instructional-facilities in the schools, improving instructional materials and facilities for effective teaching agricultural science, invitation of qualified resource persons in agricultural science for occasional institutional delivery, ability to improve instructional materials for effective teaching and learning of agricultural science-and stock school library with recommended agricultural science text books. The findings of this study supported Ajayi (2009) who opined that strategies for improving career Interest of students in vocational and education is through technology improved teaching and learning, supporting technology integration into curriculum, instruction, and assessment, necessary technology and steps to increase accessibility to this technology, professional development needs and, adopting modern instructional strategies for teaching.

CONCLUSION

Agricultural science at the secondary school level is a pre-vocational skill-based subject which inculcates sellable skills in the recipients. Effective teaching and learning of Agricultural science has the potentials of promoting agropreneurship and increased employment generation among the youths in Nigeria. Since, it could lead to the acquisition of skills for identifying viable investment opportunities in crop, livestock, agro-processing, agro-forestry, agricultural storage and marketing. This study therefore investigated the strategies for stimulating students' career interest in agricultural science in secondary schools for possible enrolment in agricultural disciplines in Tertiary institutions for increased human capital in agricultural sector of the Nigerian economy. Based on the data collected and analyzed, the study identified 10 teachers' competency-based strategies, 10 motivational-based strategies and 15 instructional-based strategies for stimulating students' career interest in agriculture in Bayelsa State. The result of the hypothesis showed that, there is no significant differences in the mean ratings of the responses of agricultural science teachers and schools management on 28 out of the 35 identified strategies for stimulating students' career interest in agricultural science, whereas there were significant differences on the mean ratings of the two groups of respondents on the remaining 7 strategies.

RECOMMENDATIONS

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

- i. Competent and professional teachers of agriculture should be recruited and allowed to take agriculture science instructions in secondary schools. This is because, by their professional training and orientation, they are in better positions of stimulating students in developing more career interest in agriculture.
- ii. Teachers should be made to adhere strictly to interactive and student-centered instructional strategies to stimulate students' career interest in agriculture.
- iii. There, should be provision of motivational incentives to both teachers and students of agriculture in order to stimulate the interest of younger ones to take to agriculture.

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