

# ASSESSING INSTRUCTIONAL STRATEGIES IN AGRICULTURAL SCIENCE TO ENHANCE SENIOR SECONDARY SCHOOL STUDENTS' INTEREST IN AGRICULTURE IN ZARIA EDUCATIONAL ZONE

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## ABSTRACT

The study assessed instructional strategies in agricultural science to enhanced senior secondary school's students interest in agriculture, within Zaria educational zone. Four specific objectives, four research questions and three hypotheses guided the study. Descriptive survey research design was adopted. Structure questionnaire design on 4-point rating scale with 154 teachers and 200 students as sampled respondents was used. The data was analysed using mean, standard deviation and t – test at 5% level of significance. The result revealed that most of the teachers were male (72.08%), with age ranged from 35 – 39 years (35.07%), married (64.29%) and were qualified to teach agricultural science at senior secondary school level (76.63%) with more than five years working experience (81.85%). Use of successful agropreneurs as resource person, use of motivation and less punishment, giving award/rewards to students, taking students for field trips, relating teaching with real life situation outside classroom, exposing students' on careers opportunities in agriculture, organizing agricultural shows and exhibition among others were acceptable instructional based strategies that could enhance students' interest in agriculture. However, there was significant difference on the mean responses of teachers and students on the instructional-based strategies that could enhanced students interest in agriculture. Recommendations were made based on the findings of the study.

**Keywords:** Instructional strategies, Agricultural science, Interest, Agriculture

## INTRODUCTION

Agriculture is seen as a vital aspect of the life of majority of Nigerians, as it is embedded in their culture right from time immemorial. It is one of the major channels through which many communities and villages develop. As it supplies major Nigeria cities with food and other essential commodities for comfortable living. Hence, it contributed significantly to the country's economy. Victor and Agbor (2017) reported that agriculture is one of the key engine for economic growth, sustainable development and channels to attend food self-sufficiency for every nation. They further pointed out that, it is the foundation and bedrock upon which the development of stable human community has depended and is depending on throughout the whole universe. Agriculture is generally seen as the art and science of cultivating the land and rearing of animals for providing food for man. Harris and Fuller

(2014) pointed out that agriculture covers areas like arts, skills, science, industries and services used by humans to obtain food from the land. They further view it as the cultivation of crop and the rearing of livestock with related industries supplying seeds, chemical fertilizers, machinery, finance and technology. This implies that to effectively cultivate crops and rear livestock to meet up with the current global food challenges sciences should be involved.

Agricultural science is that branch of science that deals with growing crops and rearing of domestic animals for the benefits of man and raw materials for the industries (Ndem, 2013). Ugo and Obiyai (2021) defined agricultural science as 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. Aneke (2015) reported that agricultural science is geared towards the development of manual skills as well as knowledge and attitude required to manage agricultural sciences. Hence, agricultural science is simply a process of teaching individuals or group of individuals how to cultivate plants and produce animals for use and subsequently national development.

Agricultural science education play a significant role in promoting self-reliance and employment generation for economic development in Nigeria. Hence, it was introduced in secondary schools with the aim of providing students with adequate skills to make living and progressively advance in farming. According to Federal Republic of Nigeria (FRN) (2013) the objective of agricultural science in secondary school level is geared towards arousing students interest in agriculture by assisting them acquire basic agricultural skills and knowledge in agriculture. These objectives could be achieve effectively if the students have interest in agriculture.

Interest is an anxiety experienced within an individual that itches him to do something (Olaitan, et al. (2013). They further explained that interest could be created in a person by another individual with the aim of helping the person to make positive progress in an event. To develop interest in agricultural science an individual should have knowledge on available opportunities in agriculture through reliable sources. Ugo and Obiyai (2021) defined strategy as a plan of action-designed to achieve a particular goal. Strategies are carefully developed plan of action in preparation to achieve a goal

(Olaitan, et al. (2015). Strategies can be seen as activities design to enhance the knowledge, skills and attitude of individuals so that they might improve in any process or act involved. It could be seen as an arrangement that assist individual to demonstrate excellent commitment in achieving goals. In the contest of this study, strategies are important plan framework that can be adopted by teachers to encourage, develop and enhance students' interest in agriculture. According to UNESCO (2000), three major strategies that stimulates students' interest in school subject include the quality and competence of the teacher, motivational incentives and instructional strategies. It is expected that agricultural science teachers develop strategies that could help students and enhance their interest in agricultural science to attain its objectives in secondary schools considering its importance to national development. Aneke (2015) described enhancement as ability of making something better than before. It is seen as a means to improve on something for better performance. This study views enhancement as adopting better instructional strategies, use of instructional materials and more effective assessment strategies in agricultural instruction to arouse students' interest in agriculture.

It is very imperative for young people to be deeply involved in agriculture and this can be stirred up by developing their interest at secondary levels. Available data and observation revealed that the number of students offering agricultural science as an optional subject in senior secondary schools has dropped in recent years (Onwunali et al. 2022). This could be attributed to student's low interest in agricultural science subject. In line with this Azubike (2011) reported that the number of students who take vocational subjects (including agricultural science) is very few and that vocational subjects are not interesting and fascinating to students because they cannot put what is learnt into practice. This situation needs urgent attention for improvement to avert hunger and extreme poverty. Peter et al. (2021) reported that students' negative attitude and low interest in agriculture is because of the method used by the teacher to deliver instruction. This indicates that most teachers failed to utilize the appropriate instructional strategies that could enhance students' interest in agriculture. However, Eya and Chukwu (2012) observed a downward trend in the quality of instruction in public secondary schools. Similarly, one could link the present poor career interest of students in agriculture to lack of interest in agricultural science, use of obsolete instructional strategies in teaching agricultural science subject in secondary schools. Amadi and Adejoh (2020) indicated student's lack of interest in agricultural education programme. It is against this background that this study was carried out to investigate instructional strategies in agricultural science to enhance senior secondary school students' interest in agriculture.

The study will establish the instructional strategies in teaching agricultural science to enhance senior secondary school students' interest in agriculture in Zaria educational zone. Specifically, the study sought to:

1. Examine the characteristics of teachers teaching agricultural science in senior secondary schools in Zaria educational zone
2. Identify instructional strategies in teaching agricultural science that could enhance student's interest in agriculture in senior secondary schools in Zaria educational zone

3. Identify instructional materials used in agricultural science that could enhance student's interest in agriculture in senior secondary schools in Zaria educational zone
4. Examine the assessment strategies in agricultural science that could enhance student's interest in agriculture in senior secondary schools in Zaria educational zone

The following research questions guided the study:

1. What are the characteristics of teacher teaching agricultural science in senior secondary schools in Zaria educational zone?
2. What are the instructional strategies in teaching agricultural science that could enhance student's interest in agriculture in senior secondary schools in Zaria educational zone?
3. What are the instructional materials used in teaching agricultural science that could enhance student's interest in agriculture in senior secondary schools in Zaria educational zone?
4. What are the assessment strategies in agricultural science that could enhance student's interest in agriculture in senior secondary schools in Zaria educational zone?

The following null hypothesis guided the study and were tested at 0.05 level of significance.

**HO<sub>1</sub>:** There is no significant difference in the mean responses of teachers and students on the instructional strategies in teaching agricultural science that could enhance student's interest in agriculture.

**HO<sub>2</sub>:** There is no significant difference in the mean responses of teachers and students on the instructional materials used in teaching agricultural science that could enhance student's interest in agriculture.

**HO<sub>3</sub>:** There is no significant difference in the mean responses of teachers and students on the assessment strategies in agricultural science that could enhance student's interest in agriculture.

## MATERIALS AND METHODS

The study was conducted in Zaria educational zone, which covers Zaria and Sabon-Gari local government areas of Kaduna State. Records from the Zaria educational board revealed 29 registered public and 129 private senior secondary schools within the zone (Muhammad 2021). This gave rise to 158 registered senior secondary schools used for the study. Five senior secondary schools each were conveniently selected from Zaria and Sabon-Gari local government area that made up Zaria educational zone. Descriptive survey research design was adopted. Simple random sampling technique was used to sample 20 students each from the sampled senior secondary schools, giving 200 students. All the agricultural science teachers in the 158 registered senior secondary schools were used for the study. The instrument used for data collection was a structured questionnaire titled: "Questionnaire on Assessment of Instructional Strategies in Agricultural Science to Enhance Students' Interest in Agriculture (QAISASESIA). The questionnaire was structured based on a 4-point scale of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD) with corresponding rating value of 4, 3, 2 and 1 respectively.

A total number of 178 questionnaires was administered to agricultural science teachers in all the 158 registered senior secondary schools with the help of two research assistance who are secondary school teachers and 154 were returned while the 200 questionnaire administered to the students were all returned and used for the analysis. The data was analysed using mean and standard deviation to answer the research questions where a mean

of 2.50 and above was accepted as a strategy to enhance students' interest in agriculture while a mean score below 2.50 were rejected as strategy to enhance student interest in agriculture (Alhassan et al. 2022). On the hypotheses, t-test at 5% level of significance was used with the help of SPSS version 21.

## RESULTS

**Table 1:** Characteristics of Teachers Teaching Agricultural Science. (n=154)

S/NO.	Items Statements	Agric. Teachers (n = 154)		Students (n = 200)		Grand Mean		
		Mean	SD	Mean	SD	Mean	SD	Rmk
1	Use of successful agropreneurs as resource person	3.71	0.29	3.59	0.13	3.65	0.21	A
2	Use of ICTs for instructional delivery in agricultural science	3.66	0.22	3.61	0.15	3.64	0.18	A
3	Effective improvisation of instructional materials for teaching and learning	3.67	0.24	3.50	0.01	3.59	0.12	A
4	Effective use of recommended agricultural science textbooks	3.75	0.36	3.52	0.02	3.64	0.19	A
5	Effective use of agricultural science laboratory with required specimen	3.81	0.44	2.82	0.06	3.32	0.25	A
6	Allocation of adequate period for agricultural science lesson on time-table	3.73	0.32	3.62	0.17	3.68	0.25	A
7	Use of conducive classroom for teaching and learning agricultural science	3.68	0.26	3.5	0.12	3.64	0.19	A
8	Provision of adequate quantity of instructional materials	3.79	0.41	3.52	0.02	3.66	0.22	A
9	Use of motivation and less punishment	3.68	0.26	3.82	0.45	3.75	0.36	A
10	Encourage students participation in classroom and practical lessons	3.70	0.28	3.69	0.27	3.70	0.28	A
11	Joke with students in and outside the classroom	3.59	0.13	3.86	0.51	3.73	0.32	A
12	give award/reward to students	3.82	0.46	3.93	0.61	3.88	0.53	A
13	Taking students for fieldtrips	3.69	0.28	3.90	0.56	3.80	0.42	A
14	Relating teaching with real life situation outside classroom	3.77	0.39	3.66	0.22	3.72	0.30	A
15	Encouraging and using better skilled students to teach others	3.64	0.19	3.56	0.08	3.60	0.14	A
16	Ensure students understand each lesson	3.92	0.59	3.85	0.49	3.89	0.54	A
17	Encourage and organize group discussion	3.59	0.13	3.56	0.09	3.58	0.11	A
18	practical demonstration of work to students in school farm	3.89	0.55	3.69	0.26	3.79	0.41	A
19	Use of students centered instructional strategies	3.75	0.36	3.83	0.47	3.79	0.41	A
20	Use of attractive instructional material	3.71	0.29	3.58	0.11	3.65	0.20	A
21	Proper supervision of students during practical	3.79	0.40	3.60	0.14	3.70	0.27	A
22	Expose students on careers opportunities in agriculture	3.86	0.51	3.94	0.62	3.90	0.56	A
23	organizing agricultural shows and exhibitions	3.73	0.32	3.89	0.55	3.81	0.44	A
24	Teach with the aim of imparting agricultural skills and not theories	3.77	0.38	3.80	0.42	3.79	0.40	A
25	Close supervision of students during practical exercises	3.71	0.30	3.72	0.31	3.72	0.31	A

Results in Table 1 shows that 72.08% of the teachers were male while 27.92% were female. The age revealed that 35.07% were within the age range of 35 to 39 years, 26.62% were within the range of 40 years and above, 31.17 % were within the 30 to 34 years, while 7.14% were within 25 to 29 years. The marital status of the teachers shows that 64.29 % were married, 30.52% were single, and 3.90% were widow/widowers while 1.3% were divorced. Educational qualification revealed that 52.60% of the teachers had BSc. Ed Agricultural Education, 23.38% had Nigerian Certificate in

Education (NCE), 13.64% had Higher National Diploma (HND) with Professional Diploma in Education (PDE), and 9.09% had Bachelor in Agriculture (B. Agric.) with professional diploma in education, while 1.30% had master's degree. On year of teaching experience, it shows that 37.01% had 11 to 15 years, 22.73% had 6 to 10 years, 18.18% had 1 to 5 years, 14.94% had 16 to 20 years and 7.14% had 21 years and above (Table 1).

**Table 2:** Instructional Strategies that could Enhance Students Interest in Agriculture in Secondary Schools

S/NO.	Items Statements	Agric. Teachers (n = 154)		Students (n = 200)		Grand Mean		
		Mean	SD	Mean	SD	Mean	SD	Rmk
1	Use of successful agropreneurs as resource person	3.71	0.29	3.59	0.13	3.65	0.21	A
2	Use of ICTs for instructional delivery in agricultural science	3.66	0.22	3.61	0.15	3.64	0.18	A
3	Effective improvisation of instructional materials for teaching and learning	3.67	0.24	3.50	0.01	3.59	0.12	A
4	Effective use of recommended agricultural science textbooks	3.75	0.36	3.52	0.02	3.64	0.19	A
5	Effective use of agricultural science laboratory with required specimen	3.81	0.44	2.82	0.06	3.32	0.25	A
6	Allocation of adequate period for agricultural science lesson on time-table	3.73	0.32	3.62	0.17	3.68	0.25	A
7	Use of conducive classroom for teaching and learning agricultural science	3.68	0.26	3.5	0.12	3.64	0.19	A
8	Provision of adequate quantity of instructional materials	3.79	0.41	3.52	0.02	3.66	0.22	A
9	Use of motivation and less punishment	3.68	0.26	3.82	0.45	3.75	0.36	A
10	Encourage students participation in classroom and practical lessons	3.70	0.28	3.69	0.27	3.70	0.28	A
11	Joke with students in and outside the classroom	3.59	0.13	3.86	0.51	3.73	0.32	A
12	give award/reward to students	3.82	0.46	3.93	0.61	3.88	0.53	A
13	Taking students for fieldtrips	3.69	0.28	3.90	0.56	3.80	0.42	A
14	Relating teaching with real life situation outside classroom	3.77	0.39	3.66	0.22	3.72	0.30	A
15	Encouraging and using better skilled students to teach others	3.64	0.19	3.56	0.08	3.60	0.14	A
16	Ensure students understand each lesson	3.92	0.59	3.85	0.49	3.89	0.54	A
17	Encourage and organize group discussion	3.59	0.13	3.56	0.09	3.58	0.11	A
18	practical demonstration of work to students in school farm	3.89	0.55	3.69	0.26	3.79	0.41	A
19	Use of students centered instructional strategies	3.75	0.36	3.83	0.47	3.79	0.41	A
20	Use of attractive instructional material	3.71	0.29	3.58	0.11	3.65	0.20	A
21	Proper supervision of students during practical	3.79	0.40	3.60	0.14	3.70	0.27	A
22	Expose students on careers opportunities in agriculture	3.86	0.51	3.94	0.62	3.90	0.56	A
23	organizing agricultural shows and exhibitions	3.73	0.32	3.89	0.55	3.81	0.44	A
24	Teach with the aim of imparting agricultural skills and not theories	3.77	0.38	3.80	0.42	3.79	0.40	A
25	Close supervision of students during practical exercises	3.71	0.30	3.72	0.31	3.72	0.31	A

SD = Standard Deviation, A = Accepted, Rmk = Remarks

The data presented in Table 2 shows the mean average of the responses from the respondents which ranged from 3.32 to 3.90 indicated that all the 25 items were greater than the cut-off point of 2.50 on 4 point rating scale. It implies that the 25 identified items in the table were accepted instructional strategies that could enhance

students' interest in agriculture in senior secondary schools. The standard deviation ranged from 0.11 to 0.56, which implies that the responses of the respondent were homogenous.

**Table 3:** Instructional Materials that could Enhanced Students Interest in Agriculture Senior Secondary Schools

S/NO.	Item Statements	Agric. Teachers (n = 154)		Students (n = 200)		Grand Mean		
		Mean	SD	Mean	SD	Mean	SD	Rmk
1	Teaching with real life materials	3.81	0.44	3.86	0.52	3.84	0.48	A
2	Use of video tapes for instruction when necessary	3.69	0.27	3.84	0.48	3.77	0.37	A
3	Use of school farm	3.84	0.48	3.69	0.26	3.77	0.37	A
4	Use of chalk board	3.76	0.33	3.53	0.04	3.65	0.19	A
5	Display and use of pictures and diagrams	3.70	0.29	3.63	0.18	3.67	0.23	A
6	Use of charts when necessary	3.64	0.20	3.58	0.11	3.61	0.16	A
7	Improvisation of teaching materials	3.56	0.09	3.52	0.03	3.54	0.06	A
8	Use of local materials for illustration	3.86	0.51	3.71	0.28	3.79	0.39	A
9	Use of agricultural textbooks	3.90	0.56	3.61	0.16	3.76	0.36	A

SD = Standard Deviation, RMK = Remarks, A = Accepted

Result on data analysis in Table 3 indicated that the mean average of the responses ranged from 3.54 to 3.84 which shows that all the nine items had score greater than the cut-off point of 2.50 on 4-point rating scale. This implies that all the nine items were acceptable instructional – based materials in agricultural science

that could enhance students' interest in agriculture in senior secondary schools. The standard deviation range from 0.06 to 0.48, which implies that the responses of the respondents were close to one another and the mean.

**Table 4:** Assessment Strategies that could Enhanced Students Interest in Agriculture in Senior Secondary Schools

S/NO.	Item Statements	Agric. Teachers (n = 154)		Students (n = 200)		Grand Mean		Rmk
		Mean	SD	Mean	SD	Mean	SD	
1	Acknowledge students' performance before instruction	3.55	0.06	3.91	0.57	3.73	0.32	A
2	Assess students' performance on skills acquired after instruction	3.69	0.27	3.90	0.55	3.80	0.41	A
3	Practical lesson should be assess based on practical skills acquired	3.83	0.47	3.89	0.55	3.86	0.51	A
4	Students practical's should be assess through oral examination	3.86	0.51	3.92	0.59	3.89	0.55	A
5	Appraise students based on ability to apply theories to practice in farm	3.71	0.29	3.87	0.52	3.79	0.41	A
6	Asking students questions during and after the lesson	3.64	0.20	3.68	0.29	3.66	0.25	A
7	Giving students assignment at the end of the lesson	3.65	0.21	3.53	0.04	3.59	0.13	A
8	Always return marked assignment or test script as early as possible	3.80	0.42	3.03	0.61	3.87	0.52	A
9	Always make corrections on assignment and test in the classroom	3.90	0.57	3.96	0.65	3.93	0.61	A
10	Discuss the results of the assignment and test with the students	3.88	0.53	3.89	0.55	3.89	0.54	A
11	Assess students in group	3.41	0.07	2.81	0.17	3.11	0.12	A
12	Assess students unannounced	3.31	0.27	2.33	0.14	2.82	0.20	A

SD = Standard Deviation, RMK= Remarks, A = Accepted

Data presented in Table 4 shows that the mean average of the responses, which ranged from 2.82 to 3.93 indicated that all the 12 items had a score greater than the cut-off point of 2.50 in 4-point rating scale. This implied that all the 12 items were accepted as assessment strategies in agricultural science that could enhanced

students interest in agriculture in senior secondary schools. The standard deviation ranged from 0.12 to 0.55, which implies that the responses of the respondents were close to one another and the mean.

**Table 5:** t-test on the mean responses of teachers and students on instructional strategies that could enhance students interest in agriculture

Respondents	N	Mean	SD	DF	Sig	Decision
Teachers	25	3.736	0.084	48	0.012	S*
Students	25	3.666	0.22			

SD = Standard Deviation, DF= Degree of Freedom S\* = Significance

Table 5 revealed the significant value on instructional strategies in agricultural science that could enhanced students interest in agriculture as 0.012 at 5% level of significance. This indicated that there was significant difference in the mean rating of teachers and

students in senior secondary schools on the instructional-based strategies in agricultural science that could enhance students' interest in agriculture. Therefore, the null hypothesis was rejected.

**Table 6:** t-test on the mean responses of teachers and students on instructional materials that could enhance students' interest in agriculture

Respondents	N	Mean	SD	DF	Sig	Decision
Teachers	9	3.751	0.112	16	0.803	NS*
Students	9	3.663	0.124			

SD = Standard Deviation, DF=Degree Freedom, S\* = Significance

Result on Table 6 revealed the significant value on the instructional materials in agricultural science that could enhance students' interest in agriculture as 0.803 at 5% level of significance. This indicated that there was no significant difference in the mean rating of teachers and students in senior secondary school on the

instructional-based material in agricultural science that could enhance students' interest in agriculture. Therefore, the null hypothesis was uphold.



**Table 7:** t-test on the assessment strategies that could enhance students interest in agriculture

Respondents	N	Mean	SD	DF	Sig	Decision
Teachers	12	3.686	0.188	22	0.042	S*
Students	12	3.635	0.522			

SD = Standard Deviation, DF=Degree Freedom, S\* = Significance

Table 7 revealed the significant value on the assessment strategies in agricultural science that could enhance student interest in agriculture as 0.042 at 5% level of significance. This indicated that there was significant difference in the mean rating of the teachers and students in senior secondary schools on the assessment strategies in agricultural science that could enhance students' interest in agriculture. Therefore, the null hypothesis was rejected.

## DISCUSSION

The findings in Table 1 shows the general characteristics of teachers teaching Agricultural Science, which indicated that, both genders were represented in the study. It also indicated that majority of the teachers were professionally trained and qualified to teach Agricultural Science with more than ten years teaching experience. In a similar vein, Yusuf et al. (2013) reported male and female teachers whom were professionally trained and qualified with good teaching experience in secondary schools in Kaduna State. Similarly, this study is in line with Obaruyi et al. (2021) who reported male and female professionally qualified teachers with average of ten years teaching experience in Agricultural Science in secondary schools in Edo State. However, on the contrary, Obaruyi et al. (2021) reported more female Agricultural Science teachers than their male counterparts. This difference could be attributed to the fact that females consider Agricultural activities as tedious and stressful. In line with this, Muhammed (2021) reported consciousness on formal education and cultural norms like early marriage and it associated consequent Kulle system.

The results in Table 2 revealed that all the 25 items were required for instructional strategies in Agricultural Science to enhance students' interest in agriculture in senior secondary schools. In a similar vein, Agricvoc (2015) recommended internship programme, real life demonstration of agricultural theories in the farm, engagement of students in field trip work and class supervision of students when carrying out practical task as effective teaching method that gears students towards hand-on experience. This could subsequently induce students into agriculture as the right skills and knowledge is acquired. Agha (2016) also observed that exposing students to work-based learning and industrial, excursion and field trips stimulates students' interest in vocational education of which agricultural education is inclusive. Okoli (2011) affirms that involving students in practical exercise meant for their training and supervising them effectively by the teacher will enhance their creative ability. This could further increase their level of interest in agriculture. Aneke (2015) also observed that exposing students to field experience, which is usually acquired in the school farm, would enhance their effectiveness in manipulating agricultural activities. However, Peter et al. (2021) reported that many agricultural science teachers teach scientific principles with low level of agricultural practices, whereas agricultural practices are needed to reinforce skills acquisition. Also, Peter et al. (2021) revealed that students perception on the methods of teaching agricultural science significantly influence their attitude towards the subject. This implies that their interest towards agriculture will

definitely increase, as they positively perceived the teaching methods.

Results presented in Table 3 revealed that all the nine items were required as instructional materials in agricultural science that could enhance students' interest in agriculture in senior secondary schools. The findings of this study supported Ugo and Obiyai (2021), who identified provision of modern instructional materials and facilities to teachers in the school, use of students centered instructional materials such as ICT for instructional delivery in agricultural science. Invitation of qualified resource persons in agricultural science for occasional instructional delivery and stock school library with recommended agricultural text books as instructional-based strategies to stimulate secondary school students' career interest in agriculture. Similarly, Amadi and Adejoh (2020) found that use of instructional materials in every lesson increases students' motivation towards agricultural business rather than jobs, because it influence agricultural skills and not theories and use of video clips of agricultural activities for teaching are strategies for re-orienting agricultural education. However, Samuel (2013) observed that in Nigeria most agricultural science teachers conduct their classroom teaching through reading and writing on chalkboard rather than practical when teaching the subject. Onwunali et al. (2022) supported this, who observed that majority of the private schools lack facilities such as demonstration farm and agricultural laboratory for practical. They rely on alternative to practical, which do not inculcate the right skills and knowledge. This could discourage or retard student's interest in agriculture.

The result of data presented in Table 4 shows that all the twelve items were assessment strategies in agricultural science that could enhanced students interest in agriculture in senior secondary schools. The findings is in line with Jenkins et al. (2012) who reported that students' assessment in agricultural education should involve measuring not only students' level of agricultural context and theory mastery, that is the cognitive domain but also their skills competence level (Psychomotor). Amadi and Solomon (2020) supported this by stating that educational experience of agricultural students should include the cognitive domain, the affective domain (interest, attitude and value) and the psychomotor domain (manipulations requiring neuromuscular coordination). Assessment as a significant principle is use to determine whether learners have been able to acquire desirable learning outcome. In agricultural science, students are expected to have competence in all domain under each area. Amadi and Adejoh (2020) observed that for proper and all round assessment, learners of agricultural education should be assessed based on their ability to produce crops for consumption, rear or breed animals, ability to impact others with the knowledge of agriculture, ability to apply theories on real life practical.

The findings in Table 5 revealed that there was a significant difference on the mean responses of teachers and students on instructional strategies that could enhanced student interest in Agricultural Science. This result is in contrast with that of Victor and

Agbor (2017) who reported that there was no significant difference. This could be attributed to high variation on the standard deviation on items such as joke with students in and outside the classroom, use of motivation and punishment and taking students for field trip. As students showed more acceptability on the items as compare to their teachers.

Table 6 revealed a significant value of 0.803 indicating that there was no statistical difference in the mean rating of Agricultural Science teachers and students on instructional materials that could enhance students' interest in Agriculture. This finding is in line with the study of Victor and Agbor (2017) were the responses of teachers and students shows no significant difference.

Result in Table 7 shows significant difference on assessment strategies that could enhance student interest in Agriculture. The findings is in contrast with that of Victor and Agbor (2017) who reported that there was no significant difference. This could be attributed to the variations on the mean responses on items such as assessing students' in-group, assessing students unannounced and appraising students based on ability to apply theories to practice on the farm. The students within Zaria educational zone seems not to be comfortable with these assessment strategies. As Ezeji (2011) pointed out that people, differ in their interest and engage in the type of work or course they like.

### Conclusion

Assessing instructional strategies in Agricultural Science to enhanced secondary school students' interest in agriculture is very important. Considering agriculture as a fundamental aspect of life of majority of Nigerians. Agricultural science education plays a significant role in promoting self-reliance and employment generation for economic development in Nigeria. Hence, the study had therefore made a number of contributions to knowledge. It has provided information on the strategies necessary to enhancing senior secondary school students' interest in Agriculture.

### Recommendations

The study made recommendations based on the findings of the study as follow:

1. Teachers of Agricultural Science should always ensure that they make use of appropriate instructional strategies that could enhance students' interest in agriculture.
2. Secondary school administrators should retrain Agricultural Science teachers through workshop and seminars on the use of appropriate instructional strategies, instructional materials and assessment strategies in agriculture.
3. Few teachers with NCE should be encourage and permitted by employers/administrators to go for further studies as BSc. Ed. is required to teach at senior secondary school level.

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