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School Environmental Factors Determining the Academic Performance of Agricultural Science Students in Secondary Schools in Bayelsa State

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Abstract: *The study investigated school environmental factors determining the academic performance of Agricultural Science students in secondary schools in Bayelsa State. The study adopted the descriptive survey research design. The targeted population of the study was all SS2 and SS3 agricultural science students in government secondary schools in Bayelsa State. A sample size of four hundred and fifty (450) agricultural science students from twenty-five (25) schools was randomly selected. Hence, the sampling technique adopted for the study was the simple random sampling technique. The instrument for data collection was the "School Environmental Factors and Students Academic Achievement Questionnaire (SEFSAAQ)". It was validated by three experts, two from the Test and Measurement unit of the Department of Counselling and Educational Psychology and one from the Department of Agricultural Science Education, Faculty of Education, Niger Delta University, Wilberforce Island, Bayelsa State. To ascertain the reliability of the instrument, the Cronbach Alpha statistical tool was used and a reliability index of 0.79 was yielded. The study contained four specific objectives and four research questions. The research questions were analyzed using mean and standard deviation. The study found that school security factors determine the academic performance of agricultural science students in secondary schools in Bayelsa State. It therefore recommended that government should provide adequate security facilities and personnel in secondary schools in Bayelsa State.*

Keywords: Academic Performance, Agricultural Science, Determining, Environmental Factors, School

Introduction

The importance of agricultural education to both national and individual development is indisputable. This is because highly educated human resources in the field of agriculture is a requisite for national development. Individuals have used agricultural education as a tool for socio-economic development hence; agricultural education is valued as a tool for social development. Nations spend much of their resources to enhance their agricultural education process and improve on learner's achievement.

Academic performance generally refers to the measurable outcomes of a learner's educational activities, often expressed through grades, test scores, and other formal assessments that reflect the extent to which learning objectives have been achieved. It is a construct that encompasses cognitive achievement, skill acquisition, and, in some frameworks, behavioural and affective components. According to York et al. (2015), academic performance represents "the extent to which a student has achieved his or her short- or long-term educational goals," and it is typically assessed using examinations, cumulative grade point averages, and other academic indicators. Similarly, Mushtaq and Khan (2012) note that academic

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performance is a multidimensional concept influenced by various factors such as learning facilities, student motivation, and the instructional environment, and it serves as a primary measure of educational quality. In a Nigerian context, Okoye and Okoye (2013) define academic performance as the ability of students to demonstrate mastery of taught concepts and skills in a school curriculum, evaluated through teacher-made tests, standardised tests, and continuous assessments.

This understanding of academic performance aligns with the scope of Agricultural Science education, where performance is not only based on theoretical understanding but also on the ability to apply knowledge in practical settings such as school farms and laboratories. Therefore, academic performance can be viewed as a composite outcome of cognitive, psychomotor, and sometimes affective learning domains, shaped by both individual and environmental factors.

School environmental factors are those things that affect the teaching and learning process within the internal surrounding of the school. These include security, peer group, learning materials, teaching methods, information and communication technology (ICT) etc. (Ayea & Ali, 2017; Ojukwu, 2017). School environment plays a major role in shaping the quality of academic achievement in agriculture. It was observed that learning is optimal when body, soul and spirit are in one accord; otherwise learning will be ineffective (Frenzel et al, 2007). A peaceful and friendly school setting makes students feel happy whereas schools located within busy town centers are susceptible to street noise- that interferes with students' concentration in their studies. Bosworth et al (2011), found in their study that neighborhood surroundings have a very high influential effect on students' perceptions of safety. Schools that are, located in neighborhoods that have high poverty and high crime rate have been shown to have a negative influence on students' performance.

Statement of the Problem

In Nigeria, many secondary schools are been established at various places by government, private organizations or individuals. As a result, teaching and learning takes place under different environments. The location, facilities, methods of teaching and operation are different in the various schools, but all the students are expected to write the same standard examination (i.e. senior secondary schools certificate examination) at a completion of the secondary education. It may be reasonable to expect a uniform performance or achievement from all the candidates since they were taught using the same curriculum and syllabus but in most cases some schools and students outperform others in all respect. The school environment is an essential key determinant to the students' achievement in agricultural science. One fundamental issue that has preoccupied researchers' mind for a long time is the reason behind the academic differences in their performance. To find out the cause of this, it has become necessary to investigate the school environmental factors that may be associated with agricultural science students' academic achievement.

Purpose of the Study

The main purpose of this study was to investigate school environmental factors determining the academic performance of Agricultural Science students in secondary schools in Bayelsa State. The study specifically identified the;

1. school security factors determining the academic performance of agricultural science students in secondary schools in Bayelsa State;
2. variables from peer group as environmental factors determining the academic performance of agricultural science students in secondary schools in Bayelsa State;
3. information and communication technology (ICT) facilities as environmental factors determining the academic performance of agricultural science students in secondary schools in Bayelsa State and

4. school farm variables as environmental factors determining the academic performance of agricultural science students in secondary schools in Bayelsa State.

Research Questions

1. What are the school security factors determining the academic performance of agricultural science students in secondary schools in Bayelsa State?
2. What are the variables from peer group determining the academic performance of agricultural science students in secondary schools in Bayelsa State?
3. What are the information and communication technology (ICT) facilities determining the academic performance of agricultural science students in secondary schools in Bayelsa State?
4. What are the school farm factors determining the academic performance of agricultural science students in secondary schools in Bayelsa State?

Significance of the Study

The findings of this study on school environmental factors as determinants of agricultural science students' academic achievement will be beneficial to the following category of persons; agricultural science student, teachers, school administrators, parents, curriculum planners and the government. To the students, the study will make them appreciate and enroll in the subject when these factors are adequately provided in the schools and handled properly. This apparently, will improve their academic achievement.

The finding will enlighten the agricultural science teachers to understand the fact that teaching the subject in a school environment where these factors are well put in place will enhance their competencies and in turn bring about positive result in the performance of students academically. To the school administrators, the findings will aid them in appreciating the need to ensure that school security, school farms, laboratories, ICT facilities etc are provided in the schools to broaden students' skills and academic achievement in agriculture. It is hoped that this study will provide information to parents on the need to enroll their wards in schools having majority of these factors which directly or indirectly determines the students' academic achievement. To the curriculum planners, the discovery made from this investigation will be of assistance. The reason is that, when reviewing the already existing curriculum of secondary school agricultural science, they will put into consideration the provision of fences, gates, school farms laboratories, internet facilities etc.

Review of related literature

School environmental factors are the internal conditions of the school that influence students' academic achievement. These are the school facilities, the human and material resources, the school climate within the school that determines students' academic achievement (Hezekiah et al, 2020). Environmental factors, largely affect, both the physical and psychological potentials of the student. This has led to the contention that many agricultural science students fail to develop their full potentials due to inadequate environmental stimulation. Findings by Ayea and Ali (2017), on the role of physical environmental factors on students' academic performance contrast the findings of most studies on physical environmental factors that there is no relationship and no effect between academic performance and physical environmental factors which could be unique to the locale of the study. Further, Shamaki, (2015) indicated that there is a significant difference between the mean performance of students taught in an ideal learning environment and that of students taught in a dull learning environment.

Equally, Okello, and Zichari (2017) study on the impact of environmental factors on the retention of secondary school teachers in Homa–Bay County revealed a great concern to stakeholders regarding achievement of school goals. Nandeke et al (2017) also noted that admission of best students and facilities does not matter, what matters is what goes on inside the schools; positive climate, hard work by teachers

and students, discipline, and effective teaching were the most vital factors behind good results in national examinations. The report further noted that the environment in which students are exposed to affects academic performance, teachers' satisfaction, and influence immensely on whether learners will excel academically or not. Such school environment creates quality results and a good reputation for learning institution. The general behaviour patterns, attitudes and commitments of learners are largely influenced by the environment in which they learn besides other factors. The environment affects performance and that improper maintenance of fixture led to lower-than-average student's performance.

School security encompasses all measures taken to combat threats to people and property in school environments. One term connected to school security is school safety, which is defined as the sheltering of students from violence and bullying, as well as exposure to harmful elements such as drugs and gang activities.

Milam et al (2010) found that increasing perceived safety increased students' achievement on standardized mathematics and reading tests in school. The presence of gangs and drug problems can negatively affect students' academic achievement. Ojukwu (2017) equally revealed that insecurity in the school environment significantly affects the academic performance of secondary school students. Using detailed student- level data and a school and classroom effects approach, Gottfried finds that attendance and achievement are positively related. Therefore, a school where students feel that their safety is not guaranteed leads to absenteeism hence poor performance/ achievement.

Peer group- peers with positive attitudes and behaviours toward education will allow and teach each other to set goals that include opportunities to learn and achieve positively. But if peer models do not convey positive attitudes towards learning, then the students observing these models will not prioritize learning in their own lives. Peer group tend to influence each other on matters pertaining to success, power, prestige, respect, way of communicating with each other and behaviour. Through these interactions, they learn how to relate to others at different levels which affects their academic achievement either positively or negatively (Fadare et al, 2021).

Mosha (2017) investigated the influence of peer group on adolescent students' academic areas in secondary schools in Tanzania and established that peers' relationship, socialization, environment, globalization, and drug use had a great influence in determining students' academic achievement. Students are under a certain level of pressure due to the social recognition they want, which motivates them to follow peer convictions or rejections.

Information and communication technology (ICT) – ICT is a broader term for information technology, which refers to all communication technologies, including the internet, wireless networks, cell phones, computers, software, video-conferencing, social networking, and other media applications and services enabling users to access, retrieve, store, transmit and manipulate information in a digital form (Food and Agricultural Organisation, FAO, 2013). Information and communication technology (ICT) gives students better understanding and enhances their retention capability by using different information technology tools.

According to Adelekun (2022), the impact of ICT on students' academic performance includes benefits and some challenges, but the benefits outweigh the challenges. ICT is one of the foremost technologies among the emerging technologies that play an important role in every sphere of human endeavour. It has witnessed a massive transformation over the years, which makes teaching and learning agriculture easier and more enjoyable. The author further affirmed that the use of ICT gives students better understanding of agricultural science and improve their use of different agricultural tools.

Agricultural science education is a programme designed for training learners in the improved crop and animal production processes and marketing as well as in teaching (Egbule, 2004). The integration of ICT

agricultural education teaching and learning is a medium in which a variety of methods, approaches and pedagogical philosophies may be implemented (Hadi & Zeinab, 2012). The authors further stated that, before integrating the use of ICT tools in agricultural education instructional delivery, one need to make sure that suitable levels of investment is in place such as adequate training, good policy, careful planning, restructuring the teaching process, and a systemic approach in order to achieve maximum educational benefits.

School farm and laboratory- many factors determine academic achievement of agricultural science students. School farm and laboratory are among the many environmental factors that influences students' academic achievement in agricultural science. Many teachers go to the class to teach agricultural science as a liberal arts subject without any material to assist them or the learner.

Abdullah (2012), pointed out that teaching agriculture without the application of practical does not promote meaningful learning of the subject as it appeals only to the sense of hearing. Agricultural science is a doing subject, and for effective learning to take place, it has to include practical. The fundamental of an operational school farm is to transfer classroom instruction to practical experiences in the field. In line with this, the school farm offers students the opportunity to acquire knowledge, skills and competencies and demonstrate farm principles and practices, carryout field experiment which cannot be accommodated in the laboratory alone. According to William and McCarthy (2006) school farm is capable of contributing positively to the teaching of agricultural science in secondary school. School farm provides students with supervised occupational experience in agricultural productivity, generating circumstances for students to marketing agricultural products and encouraging the use of records and reports similar to those used in agriculture. Availability of school farm according to Onwumere et al (2016), in public schools is not enough to bring about the needed boost in academic performance of students.

Methodology

The study was carried in Bayelsa State and it adopted descriptive survey research design. The targeted population of the study were all SS2 and SS3 agricultural science students in government secondary schools in Bayelsa State. A sample size of two hundred and forty (450) agricultural science students from twenty-five (25) schools was randomly selected. Hence, the sampling technique adopted for the study was the simple random sampling technique. The SS2 and SS3 students were chosen for the study because it is expected that they have had reasonable knowledge of agricultural science than the rest students.

The instrument for data collection was the "School Environmental Factors and Students Academic Achievement Questionnaire (SEFSAAQ)". It was structured into a Four-point scale of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD). The instrument contained forty item statements which were used to elicit responses from the respondents. It was validated by three experts, two from the Test and Measurement unit of the Department of Counselling and Educational Psychology and one from the Department of Agricultural Science Education, Faculty of Education, Niger Delta University, Wilberforce Island, Bayelsa State.

To ascertain the reliability of the instrument, the Cronbach Alpha statistical tool was used and a reliability index of 0.79 was yielded, indicating a good reliability. The instrument was administered to the respondents by the researcher and four trained research assistants and was retrieved immediately the respondents did the needful. The researcher and each of the research assistants covered five (5) schools each. For the analysis, the research questions were analyzed using mean and standard deviation. For a decision to be reached, items with mean scores equal or greater 2.50 were agreed. While, items with mean scores equal to or less than 2.49 were disagreed.

Results

RQ 1: What are the school security factors determining the academic performance of agricultural science students in secondary schools in Bayelsa State?

Table 1: Mean and Standard Deviation Analysis of School Security Factors Determining the Academic Performance of Agricultural Science Students in Secondary Schools in Bayelsa State

S/N	Item Statements	ẍ	SD	Decision
1	Presence of school gates and perimeter fencing makes me feel secured in and enhances my academic focus in agricultural science.	3.15	0.89	**Agree**
2	The presence of security personnel on school premises contribute to my academic stability.	3.26	0.77	**Agree**
3	Frequent security threats around the school environment negatively affect my learning outcomes in agricultural science.	3.12	0.93	**Agree**
4	Proper monitoring of students' movement during school hours enhances my academic performance.	3.21	0.90	**Agree**
5	Installation of surveillance cameras promotes a safe learning environment for me in agricultural science students.	3.28	0.76	**Agree**
6	I feel more confident to attend school to learn agricultural science when security measures are effective.	3.20	0.85	**Agree**
7	Inadequate security discourages me from participating in practical agricultural science activities.	3.23	0.87	**Agree**
8	Emergency response systems improve my safety and academic concentration in agricultural science	3.32	0.71	**Agree**
9	Security breaches during school hours reduces my classroom engagement in agricultural science	3.38	0.93	**Agree**
10	Teachers are more effective in delivering agricultural science lessons in a secure environment.	2.94	1.17	**Agree**
	Grand Mean and Standard Deviation	**3.21**	**0.88**	**Agree**

The results in Table 1 show that all the identified school security factors were agreed upon by the students as determinants of their academic performance in Agricultural Science, with a grand mean of 3.21 and a standard deviation of 0.88. Specifically, the presence of school gates and perimeter fencing (ẍ=3.15, SD=0.89) as well as security personnel on school premises (ẍ=3.26, SD=0.77) were considered important for students' sense of safety and academic stability. Students also agreed that frequent security threats negatively affect their learning outcomes (ẍ=3.12, SD=0.93), while proper monitoring of movement during school hours (ẍ=3.21, SD=0.90) enhances academic performance. Technological measures such as the installation of surveillance cameras (ẍ=3.28, SD=0.71) were also perceived to promote safety and concentration. Students further indicated that inadequate security discourages participation in practical agricultural activities (ẍ=3.23), SD=0.87), while security breaches reduce classroom engagement (ẍ=3.38, SD=0.93). Similarly, effective security measures were seen as increasing students' confidence to attend school (ẍ=3.20, SD=0.85) and enabling teachers to deliver agricultural science lessons more effectively (ẍ=2.94, SD=1.17).

RQ 2: What are the variables from peer group determining the academic performance of agricultural science students in secondary schools in Bayelsa State?

Table 2: Mean and Standard Deviation Analysis of Variables from Peer Group Determining the Academic Performance of Agricultural Science Students in Secondary Schools in Bayelsa State

S/N	Item Statements	ẍ	SD	Decision
1	My peers influence my attitude toward studying Agricultural Science.	3.00	1.10	**Agree**
2	Being part of an academic-focused peer group improves my performance in Agricultural Science.	3.01	0.92	**Agree**
3	Negative peer influence has sometimes made me lose interest in Agricultural Science.	2.96	1.17	**Agree**
4	Working together with my peers helps me better understand Agricultural Science topics.	3.12	0.93	**Agree**
5	Encouragement from my friends motivates me to do well in Agricultural Science.	3.21	0.90	**Agree**
6	Studying Agricultural Science in groups with my peers helps me learn more effectively.	3.06	1.00	**Agree**
7	When my friends are disruptive during class, it affects my concentration in Agricultural Science.	3.31	0.73	**Agree**
8	Some of my peers have inspired me to develop more interest in Agricultural Science.	3.28	0.69	**Agree**
9	Competing academically with my friends pushes me to do better in Agricultural Science.	3.22	0.82	**Agree**
10	My relationship with my classmates influences how actively I participate in Agricultural Science lessons.	3.93	1.39	**Agree**
	Grand Mean and Standard Deviation	**3.21**	**0.97**	**Agree**

The results in Table 2 show that all the identified peer group variables were agreed upon by the students as determinants of their academic performance in Agricultural Science, with a grand mean of 3.21 and a standard deviation of 0.97. Specifically, peers influence students' attitude toward studying Agricultural Science (ẍ=3.00, SD=1.10) and being part of an academic-focused peer group (ẍ=3.01, SD=0.92) improves my performance in Agricultural Science. Students also agreed that negative peer influence has sometimes made them lose interest in Agricultural Science (ẍ=2.96, SD=1.17), while working together with my peers (ẍ=3.12, SD=0.93) helps them understand Agricultural Science topics better. Encouragement from friends (ẍ=3.21, SD=0.90) and studying in groups with peers (ẍ=3.06, SD=1.00) motivate and help students to do well and learn Agricultural Science more effectively. Students further indicated that when friends disrupt during class (ẍ=3.31, SD=0.73) it affects their concentration in Agricultural Science, while some of my peers have inspired me to develop more interest in Agricultural Science (ẍ=3.28, SD=0.69). Similarly, competing academically with friends pushes them to do better in Agricultural Science (ẍ=3.22, SD=0.82) and relationship with classmates influences how active they participate in Agricultural Science lessons (ẍ=3.93, SD=1.39).

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RQ 3: What are the information and communication technology (ICT) facilities determining the academic performance of agricultural science students in secondary schools in Bayelsa State?

Table 3: Mean and Standard Deviation Analysis of Information and Communication Technology (ICT) Facilities Determining the Academic Performance of Agricultural Science Students in Secondary Schools in Bayelsa State

S/N	Item Statements	ẍ	SD	Decision
1	Having access to ICT tools helps me perform better in Agricultural Science.	2.94	1.17	**Agree**
2	Using computers improves my ability to research Agricultural Science topics.	3.28	0.76	**Agree**
3	Projectors and smart boards make it easier for me to understand Agricultural Science lessons.	3.06	1.00	**Agree**
4	Agricultural simulation software helps me gain more practical knowledge.	3.31	0.73	**Agree**
5	Poor internet connection makes it hard for me to use online learning platforms for Agricultural Science.	3.28	0.69	**Agree**
6	When my teacher uses ICT tools, the Agricultural Science lessons become clearer and more interesting.	3.22	0.82	**Agree**
7	Multimedia resources (like videos and animations) make Agricultural Science lessons more engaging for me.	3.00	1.10	**Agree**
8	Regularly accessing agricultural content online helps me improve academically.	3.01	0.92	**Agree**
9	Functional computer labs in my school help me develop useful ICT skills related to Agricultural Science.	2.96	1.17	**Agree**
10	When ICT tools are not available, I lose interest in Agricultural Science.	3.12	0.93	**Agree**
	Grand Mean and Standard Deviation	**3.12**	**0.93**	**Agree**

The results in Table 3 show that all the identified Information and Communication technology (ICT) facilities were agreed upon by the students as determinants of their academic performance in Agricultural Science, with a grand mean of 3.12 and a standard deviation of 0.93. Specifically, having access to ICT tools (ẍ=2.94, SD=0.17) helps them perform better in Agricultural Science and using computers improves their ability to research Agricultural Science topics (ẍ=3.28, SD=0.76). Students also agreed that projectors and smart boards make it easier for them to understand Agricultural Science lessons (ẍ=3.06, SD=1.00), while Agricultural simulation software (ẍ=3.31, SD=0.73) helps them gain more practical knowledge in Agricultural Science. Contrarily, poor internet connection (ẍ=3.28, SD=0.69) makes it hard for me to use online learning platforms for Agricultural Science. However, when teacher uses ICT tools (ẍ=3.22, SD=0.82) the Agricultural Science lessons become clearer and more interesting to them. Students further indicated that multimedia resources (like videos and animations) make Agricultural Science lessons more engaging for them (ẍ=3.00), SD=1.10), while regularly accessing Agricultural content online helps them improve academically (ẍ=3.01, SD=0.92). Similarly, functional computer laboratories in schools help them develop useful ICT skills related to Agricultural Science (ẍ=2.96, SD=1.17) and on the contrary, when ICT tools are not available, students lose interest in Agricultural Science (ẍ=3.12, SD=0.93).

RQ 4: What are the school farm factors determining the academic performance of agricultural science students in secondary schools in Bayelsa State?

Table 4: Mean and Standard Deviation Analysis of School Farm Factors Determining the Academic Performance of Agricultural Science Students in Secondary Schools in Bayelsa State

S/N	Item Statements	ẍ	SD	Decision
1	A well-equipped school farm helps me understand Agricultural Science better through practice.	3.01	0.92	**Agree**
2	Regular participation in farm activities improves my agricultural skills.	2.96	1.17	**Agree**
3	Having livestock on the school farm helps me learn about animal production more effectively.	3.12	0.93	**Agree**
4	When there are not enough farm tools, it becomes difficult to learn Agricultural Science practically.	3.15	0.89	**Agree**
5	Working on crop plots helps me apply what I learn in Agricultural Science classes.	3.20	0.85	**Agree**
6	I perform better in Agricultural Science when I have real farming experiences.	3.31	0.73	**Agree**
7	Supervised activities on the school farm improve my practical skills in Agricultural Science.	3.21	0.90	**Agree**
8	When the school farm is not well maintained, it becomes less useful for learning.	3.06	1.00	**Agree**
9	Having access to seeds, fertilizers and other inputs makes Agricultural Science more interesting for me.	2.94	1.17	**Agree**
10	The school farm helps me understand Agricultural Science lessons by showing me real examples.	3.28	0.76	**Agree**
	Grand Mean and Standard Deviation	**3.12**	**0.93**	**Agree**

The results in Table 4 show that all the identified school farm factors were agreed upon by the students as determinants of their academic performance in Agricultural Science, with a grand mean of 3.12 and a standard deviation of 0.93. Specifically, A well-equipped school farm (ẍ=3.01, SD=0.92) helps them understand Agricultural Science better through practice and regular participation in farm activities improves my agricultural skills (ẍ=2.96, SD=1.17). Students also agreed that having livestock on the school farm helps them learn about animal production more effectively (ẍ=3.12, SD=0.93), and negatively, when there are not enough farm tools (ẍ=3.15, SD=0.89), it becomes difficult for them to learn Agricultural Science practically. Working on crop plots (ẍ=3.20, SD=0.85) helps them apply what they learn in Agricultural Science classes and they perform better in Agricultural Science when they have real farming experiences (ẍ=3.31, SD=0.73). Students further indicated that supervised activities on the school farm improve their practical skills in Agricultural Science (ẍ=3.21, SD=0.90) and contrarily, when school farms are not well maintained, it becomes less useful for learning (ẍ=3.06, SD=1.00). Student still agreed that having access to seeds, fertilizers and other inputs makes Agricultural Science more interesting for them (ẍ=2.94, SD=1.17) and the school farm helps students understand Agricultural Science lessons by showing them real examples. (ẍ=3.28, SD=0.76).

Discussions

The research has shown that school security factors determine the academic performance of agricultural science students in secondary schools in Bayelsa State. These factors such as fence and entrance gate, security personnel and CCTV camera. The findings are confirmed by Ojukwu (2017), who revealed in his study on 'effects of insecurity of school environment on the academic performance of secondary school students in Imo state' that insecurity significantly affects students' academic performance. A peaceful and friendly school setting makes students feel happy whereas schools located within environments not secured

and busy town centers are susceptible to street noise- that interferes with students' concentration in their studies.

Based on the findings shown, variables from peer group determine the academic performance of agricultural science students in secondary schools in Bayelsa State, because a good number of the respondents agreed that they come late to school because of their friends, they usually do group reading together, etc. Fadare et al (2021), affirmed to the findings. Their findings revealed that, peer group pressure is in two ways, both positive and negative, that peer group pressure is not always bad. The fact many students have confidence in their friends show also that they could be helped in terms of studies when they are together, and it helped them to grow in knowledge and improve academically.

The findings of this study also revealed that, agricultural science students achieve better in their academics when they are exposed to the use of ICT facilities available in schools and ICT facilities promote their active and independent learning. The findings are in agreement with Adelakun (2022), who stated in his work that there should be provision of standard ICT infrastructure, a responsive e-learning platform, and strong internet connectivity for effective teaching and learning process. The study further encouraged students with internet mobile phones and other gadgets to use the internet to supplement their academic research rather than the usual chatting, catching fun with friends and family all the time.

Finally, findings of the study showed a high extent of students in agreement to the fact that their academic achievement in agricultural science will improve when they are taught practical topics either at the school farm, and that concepts of agriculture are better understood when taught in the school farm. The findings of the study are in consonant with of Williams and McCarthy (2006) that school farm provides students with supervised occupational experience in agricultural productivity, generating circumstances for students to market agricultural products and keep records. It also revealed that school farm is capable of contributing positively to the teaching and learning of agricultural science in schools. Contrary to the findings of this study Onwumere et al (2016), in their study 'influence of school farm on teaching of agricultural science in secondary schools' stated that, availability of school farm in public secondary schools is not enough to bring about the needed boost in the academic performance of students.

Conclusion

Based on the findings, the study concludes that school security, peer group, availability of information and communication technology facilities, and school farm determine the academic performance of agricultural science students in secondary schools in Bayelsa State.

Recommendation

The study therefore recommends that;

1. Government should provide adequate security facilities and personnel in secondary schools in Bayelsa State.
2. For effective and efficient learning, students should pull out from peers that are not educationally encouraging.
3. ICT facilities should be adequately provided to enhance teaching and learning of agricultural science in secondary schools in Bayelsa State.
4. Teachers and students should ensure the effective and efficient utilization of the available school farms in the teaching and learning of agricultural science in schools.

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