

Perceived Difficulties in Teaching Selected Topics in Agricultural Science in Senior Secondary Schools in Bayelsa State, Nigeria

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Abstract

The study examined perceived difficulties faced by teachers in selected topics in Agricultural Science in senior secondary schools in Bayelsa State. The specific objectives of the study were to examine perceived difficulties teachers face in teaching apiculture and agricultural engineering and mechanisation as a topic in the senior secondary schools syllabus in Bayelsa state. A descriptive survey (cross-sectional) design was used. The population comprised all 242 Agricultural Science teachers in secondary schools in Bayelsa State, Nigeria. The sample of the study was 100 Agricultural Science teachers selected from senior secondary schools in three (3) local government areas, one local government from each of the three (3) senatorial zones in Bayelsa State. The instrument titled “Perceived Difficulties in Teaching Selected Topics in Agricultural Science” with 14 items was utilised for data collection. The instrument underwent experts content validation showed internal consistency (Cronbach’s α) index of .79. The data collected were analysed using frequency counts, percentage scores, mean, standard deviation and Chi-square for the bio-data, research questions and hypotheses respectively. The result revealed that significant difficulties exist when teaching apiculture and agricultural engineering and mechanisation as perceived by Agricultural Science teachers. It was therefore recommended amongst others that government should make funding available for the acquisition of relevant agricultural materials and tools, especially in apiculture farming to enhance the teaching of apiculture in secondary schools in Bayelsa State.

Key words: Perceived Difficulties, Agricultural Science, Apiculture, Agricultural Engineering and Mechanisation

Introduction

Agricultural Science is a practical, vocational course that focuses on developing skills. Agricultural Science instruction necessitates hands-on activities and fieldwork. Students at the basic, post-basic, and higher education levels offer it. According to the National Policy on Education (2014), post-basic education is the senior secondary school level that takes three years to complete. According to the National Curriculum Council (NCC, 2009), agricultural science is taught at the secondary level specifically to spark and sustain students' interest in agriculture and to provide a basis for promoting agriculture as a career option for students (NCC, 2009), due to the part agriculture plays in fostering independence, producing food, and providing raw materials to agro-allied enterprises. Unfortunately, because teachers of the subject face certain difficulties when teaching these subjects, it has been noted that students leave secondary school without gaining the necessary skills in some crucial areas of the Agricultural Science curriculum, such as apicultural, agricultural engineering and mechanisation, plant nutrients, etc. (Rabi 2016).

There are many opportunities for young people to gain economic empowerment through agricultural science, but in order to be effective and productive, they need specific knowledge, skills, and abilities that can be learnt from knowledgeable and skilled agricultural science teachers—apiculture is no exception. Of all the helpful insects, honey bees are the most well-known because their byproducts—honey, beeswax, and propolis—are utilised in medicine, illness treatment, chewing gum, candy, antibiotics, and pollination (Neetu, 2019). Furthermore, mechanisation and agricultural engineering which emphasise the use of irrigation systems, machinery, and other technical advancements that boost agricultural productivity are crucial to contemporary farming (Amao & Oyewumi, 2017). Access to agricultural equipment, such as tractors, ploughs, or irrigation and drainage systems, is necessary for the teaching of this subject. Instructors are supposed to teach students about these equipment' operation, upkeep, and contribution to agricultural productivity. This turns into a theoretical exercise that students frequently find difficult to understand in the absence of real-world examples.

The goal of education is to develop better people by increasing their capacity to support better livelihoods. This is especially important in emerging nations like Nigeria, where poverty and illiteracy rates are significantly higher. Using educational resources and tools is necessary to accomplish the specified goals. According to Knapper (2008), the majority of teachers still educate secondary school pupils primarily using the conventional chalk and board method, which has a number of shortcomings in terms of efficacy. But according to Bello (2011) and other authors, educators are starting to understand that some pedagogies don't appear to have the desired impact on students and are yearning for better alternatives. Examining teachers' perceptions of the challenges they face when teaching topics from Agricultural Science syllabus is useful since beekeeping, agricultural engineering, and mechanisation are more practical learning experiences than merely theoretical ones.

Statement of the Problem

Nigeria accepted the teaching and study of agriculture at all educational levels due to the importance of the topic to a country. Agricultural education, as outlined in the National Curriculum for Senior Secondary Schools (FME, 2008), is intended to create a strong basis for vocational agriculture, which aims to teach people the necessary professional skills to become

productive farmers. Students' comprehension of agricultural science may be lacking as a result of the perceived challenges experienced by agricultural science teachers in imparting curricular knowledge, which may impact their development of skills relevant to their jobs. It is often recognised that instructors are the biggest and most important contributors to the educational system, influencing the quality of educational output to a significant degree, aside from students (Fadipe, 2003).

Nigeria, and Bayelsa State in particular, is gradually sliding into food insecurity and all avenues need to be explored to curb the trend. It is believed that if all aspect of Agriculture is properly and adequately taught to student their moral will be energized and their interest in farming will rise. However, no educational system, according to the National Policy on Education (2004), can surpass the calibre of its instructors, Therefore, it is necessary to investigate the perceived difficulties of teaching selected subjects from Agricultural Science in senior secondary schools in Bayelsa State.

Purpose of the Study

The study is conducted for the purpose of ascertaining the following:

1. perceived difficulties agricultural science teachers face in teaching apiculture as a topic in the senior secondary schools in Bayelsa state.
2. perceived difficulties agricultural science teachers face in teaching agricultural engineering and mechanisation as a topic in the senior secondary schools in Bayelsa state.

Research Questions

1. To what extent do teachers face difficulties in teaching apiculture as a topic as perceived by Agricultural Science teachers in the senior secondary schools in Bayelsa state?
2. To what extent do teachers face difficulties in teaching agricultural engineering and mechanisation as a topic as perceived by Agricultural Science teachers in the senior secondary schools in Bayelsa state?

Hypotheses

Ho₁: There are no significant difficulties faced by teachers in teaching apiculture as a topic as perceived by Agricultural Science teachers in the senior secondary schools in Bayelsa state.

Ho₂: There are no significant difficulties faced by teachers in teaching as a agricultural engineering and mechanisation topic as perceived by Agricultural Science teachers in the senior secondary schools in Bayelsa state.

Significance of the Study

The findings of this study will benefit a wide range of stakeholders, including the Ministry of Education, the Ministry of Agriculture and Natural Resources, Agricultural Science teachers, Agricultural Science students, Higher Institutions of learning and other researchers. The findings of this study will provide critical data to the Ministry of Education on the instructional barriers teachers face in the classroom. Furthermore, the study outcome will serve as a guide for improving teaching methodologies, teachers' preparedness, ensuring that teachers can better convey complex agricultural content. In a nutshell, each of the mentioned groups stands to gain

valuable insights into the instructional challenges faced by teachers in delivering Agricultural Science syllabus, especially in Bayelsa State.

Literature Review

One of the most important aspects of teaching agricultural science is the ability of teachers to bridge the gap between academic knowledge and practical application. Since schools usually lack the facilities necessary to provide hands-on training, it is more difficult to narrow this gap when there are inadequate teaching instruments available (Kabugi, 2013). In this context, the teacher is viewed as both an educator and a problem-solver who must get beyond all challenges to ensure that students receive a well-rounded education. Teachers in these environments have to adapt their teaching methods to compensate for the lack of helpful tools. They commonly use alternative educational strategies, such as project-based learning or simulations, to effectively engage students.

Professional knowledge is another crucial attribute of educators. Teachers of agricultural science must possess both pedagogical and subject-matter expertise in order to teach the curriculum effectively. Many teachers struggle in the classroom and are unable to stay up to date with the latest advancements in agricultural practices and teaching tactics because they lack opportunities for professional development (Kosqi et al., 2013). One of the most significant issues facing Agricultural Science curriculum is its inability to adapt to the rapidly evolving agricultural sector. Although the curriculum aims to equip students with the knowledge they need to address today's agricultural concerns, it is occasionally criticised for being outdated or unduly theoretical. Instructors are required to teach a wide variety of courses, some of which may need specialised knowledge and practical experience that they lack (Adah, 2011). Some instructors may find it challenging to teach some Agricultural Science courses due to their complexity (Amao & Oyewumi, 2017). According to the authors, because of their scientific or technical nature, several agricultural science subjects—like the study of crop diseases, apiculture, and agricultural economics—seem to be intrinsically challenging to teach. To be effective in their roles, teachers must pursue continual professional development, particularly in disciplines like agricultural science where new techniques and resources are always being created. If instructors lack frequent training to effectively explain current agricultural facts, students' learning outcomes may decrease.

Difficulties in Teaching Apiculture and Agricultural Engineering and Mechanisation in Secondary Schools

Access to beekeeping supplies, including hives, safety gear, and hive care tools, is necessary for teaching apiculture, but secondary schools sometimes lack these supplies, especially in poor areas. It will be challenging for educators to provide pupils the experience they need to comprehend the practical facets of beekeeping without the right tools. According to Abou-Shaara et al. (2013), the absence of real bee colonies or apiaries would restrict teachers' ability to see and engage with live bees in their natural habitat so they may appropriately train their pupils. Teachers' capacity to effectively understand the complexity of bee management, honey production, and hive health in order to influence pupils is hampered by this lack of practical experience. Teaching apiculture may also be hampered by the safety issues around bee handling. Teachers and pupils, especially those who are allergic to bee stings, may be at risk from bees, even though they are normally not aggressive. Because of this possible risk, educational institutions may decide not to include hands-on beekeeping activities at all.

In the same veil, teaching agricultural mechanisation in secondary schools necessitates practical experience with machinery like tractors, ploughs, ridgers, and harvesters, many secondary schools in both urban and rural areas lack this experience, possibly because of the high cost of purchasing and maintaining such equipment. As a result, there are less possibilities for instructors to use hands-on instruction, which is essential for comprehending how mechanisation increases farming productivity. Teachers are forced to rely on textbooks and theoretical explanations in the absence of access to real-world machinery, which is insufficient to provide students a thorough knowledge of agricultural engineering concepts (Takeshima et al., 2015). Students find it challenging to completely understand the significance and use of mechanisation in agriculture because of this disconnect between theory and reality. Another issue can be the lack of agricultural science instructors with the necessary training and expertise in agricultural engineering. Few agricultural science instructors possess the specific expertise needed to effectively teach the technical parts of engineering and mechanisation; the majority are trained in broad agricultural themes.

Theoretical Review

According to this idea, which was first put out by Jean Piaget in 1936 and then developed by Lev Vygotsky in the 1960s, teachers actively create their own expertise and comprehension of the world by having experiences and thinking back on those occurrences. While Vygotsky focused on the social environment of learning, especially the significance of interactions with peers and more experienced people, Piaget's work concentrated on how individuals learn and develop cognitive capacities through phases of maturity.

The Constructivist Theory offers a strong foundation for comprehending how these challenges arise and how to handle them in the context of teachers' instructional challenges in a few selected sections of the senior high school agricultural science curriculum. As a discipline, agricultural science heavily relies on experiential and hands-on learning, which is in line with constructivism's tenets. However, students' learning experiences can become constrained and hinder their capacity to construct meaningful understanding when teachers encounter instructional problems, whether because of a lack of resources, inadequate training, or unfamiliarity with complicated topics.

Empirical Review

Thompson and Edwards (2020) used Agricultural Science Teachers in Queensland, Australia, as a case study to investigate the difficulties in teaching apiculture in secondary schools. Investigating the challenges experienced by agricultural science instructors when instructing apiculture in senior secondary schools was the goal of the study. According to the authors' study, the main issues were instructors' lack of practical expertise, restricted access to beekeeping supplies, and insufficient teaching resources for apiculture. In order to increase teachers' practical apiculture expertise, the study suggested that schools purchase contemporary beekeeping equipment and provide training sessions.

Ndiaye and Sarr (2019) investigated the obstacles to successful apiculture education in Senegalese secondary schools in a similar study. The study combined qualitative interviews with quantitative surveys in a mixed-method approach. Purposive sampling was used to choose 80 agricultural science instructors from Senegal, who made up the population. The study's findings demonstrated that the absence of current apiculture teaching resources, inadequate teacher

preparation, and low student interest in beekeeping were the main obstacles. The report advised collaborations with nearby beekeepers to offer experiential learning opportunities and curricular changes to incorporate more useful apiculture activities.

Furthermore, a research on the difficulties in teaching agricultural engineering and mechanisation in rural Texas secondary schools was carried out by Anderson and Smith (2020). The purpose of the study was to determine the challenges faced by agricultural science instructors when instructing agricultural engineering and mechanisation as part of the senior high school curriculum. Three goals, research questions, and hypotheses were the focus of the study. A sample of 100 instructors was chosen by simple random selection from a population of 200 agricultural science teachers in rural Texas, using a descriptive survey approach. It was discovered that teachers faced difficulties with limited access to contemporary agricultural equipment, a dearth of possibilities for professional growth, and a lack of hands-on learning opportunities for pupils. The study suggested that educational institutions make investments in agricultural equipment and offer agricultural engineering professional development to instructors.

Additionally, Mogale and Tshabalala (2019) looked at the obstacles to teaching agricultural mechanisation in secondary schools in South Africa. The purpose of the study was to determine the difficulties agricultural science instructors have while instructing students in agricultural engineering and mechanisation. Four goals, research questions, and related hypotheses comprised the study. The study employed a mixed-methods approach, integrating both qualitative interviews and quantitative surveys. A sample of 150 instructors was chosen by stratified random selection from the population of 300 agricultural science teachers in Gauteng, South Africa. The results demonstrated that inadequate teacher preparation, a lack of access to automated technology, and out-of-date educational materials were the primary obstacles. The authors suggested making sure that teachers obtain practical training with contemporary equipment and revising the curriculum to incorporate more recent developments in mechanisation.

Methodology

This research employed a descriptive survey (cross-sectional) design. This design is suitable since the study aims to investigate the perceived challenges encountered by teachers in instructing certain courses within Agricultural Science Syllabus in secondary schools in Bayelsa State. The study's population consisted of 242 Agricultural Science instructors in secondary education. The sample comprised 100 Agricultural Science instructors chosen from secondary schools throughout three Local Government Areas in Bayelsa State, representing the three senatorial zones of the state. The local government areas include Ogbia, Ekeremor and Southern Ijaw Local Government Areas, in Bayelsa East, West and Central respectively. The random sampling approach was used in choosing the local government area while the purposive sampling method was employed in selecting the participants of the study to ensure that only Agricultural Science instructors participated in the study. A questionnaire titled: 'Perceived Difficulties in Teaching Selected Topics in Agricultural Science' with 14 items was utilised for data collection. The instrument underwent experts validation showed internal consistency (Cronbach's α) of .79. A total of 52 Agricultural Science teachers were picked from Southern Ijaw LGA, 28 teachers from Ogbia LGA and 20 teachers from Ekeremor LGA. The respondents were provided four (4) days to let them reply conveniently, after which the questionnaire were

retrieved. The retrieval of the questionnaire was 100% successful. Three (3) respondents who reported misplacement of their questionnaire were re-administered with a fresh copy which was filled and retrieved on the spot.

Mean based analysis was applied in assessing answer to the questionnaire items while chi-square was used to evaluate the hypotheses. The response categories were given numerical values ranging from 4 to 1, from very high extent to very low extent, in order to determine the mean. Item means ≥ 2.50 were interpreted as “High Extent,” whereas means < 2.50 indicated “Low Extent.” The lowest and top limits are 2.49 and 2.50, respectively. As a consequence, any item with a mean of 2.50 or higher will be considered as acceptable, while those with a mean of 2.49 or lower will be regarded as rejected. This is thus because the response continuum's true lower limit for agreeing is 2.50. Chi-Square was utilised to assess the hypotheses of 0.05 alpha level of significance.

The chi-square formula used is $\chi^2 = \sum \frac{(f_o - f_e)^2}{f}$

Where

f_o = the observed frequency

f_e = the expected frequency

Results

The data analysed and presented is restricted to the questionnaire that were properly completed and returned by the respondents in the study.

Table 1: Simple Percentage Analysis of Respondent Based on Gender

S/N	Gender	Frequency	Percentage
1	Male	67	67
2	Female	33	33
	Total	100	100.0

Source: Fieldwork, 2025

Data in Table 1 revealed that, 67 (67%) of the total respondents were male while 33 (33%) were female. This implication of the result is that there are more male Agricultural Science teachers than female in secondary schools in Bayelsa State. The ratio is approximately 2 to 1.

Table 2: Distribution of Respondents by Age

S/N	Age	Frequency	Percentage
1	Below 30 years	4	4
2	31 – 35years	25	25
3	36 - 40years	36	36
4	41 – 45 years	21	21
5	Above 46 years	14	14
	Total	100	100.0

Source: Fieldwork, 2025

Table 2 displayed the age distribution of the study respondents. The results revealed that, 4 (4%) of the respondents were age below 30, while 25 (25%) were between 31 – 35 years. Also, of the 100 responders, 36 (36%) were in the 36–40 age range and 21 (21%) of the respondents were found to be between the ages of 41 and 45. Lastly, 14 respondents, or 14% of the participants, were above 46 years.

Table 3: Distribution of Respondents by Qualification

S/N	Educational Qualification	Frequency	Percentage
1	NCE	10	10
2	B.Sc./B.ED	71	71
3	Others	19	19
Total		100	100.0

Source: Fieldwork, 2025

Table 3 illustrates the qualification distribution of the study participants. The findings indicate that 10 (10%) had a Nigerian Certificate in Education (NCE), 71 (71%) of the respondents had a B.Sc. or B.ED. degree, and 19 (19%) had other comparable degrees.

Table4: Distribution of Respondents by Years of Experience

S/N	Teaching experience	Frequency	Percentage
1	0 - 5 years	3	3
2	6 – 10 years	17	17
3	11 – 15 years	29	29
4	16 – 20 years	41	41
5	25 and above	10	10
Total		100	100.0

Source: Fieldwork, 2025

The data presented in Table 4 indicate that 3 (3%) of the total respondent have teaching experience of 5 years and below, 17 (17%) have 6 to 10 years teaching experience, 29 (29%) have 11 to 15 years teaching experience, and 41 (41 %) have 16 to 20 years teaching experience. Finally, 10 (10%) had 25 years and above teaching experience.

Research Question One

To what extent do teachers face difficulties in teaching apiculture as a topic as perceived by Agricultural Science teachers in the senior secondary schools in Bayelsa state?

Table 5: Mean and standard deviation scores of respondents on perceived difficulties faced by Agricultural Science teachers in teaching apiculture.

Item	N	X	SD	Decision
Agricultural Science teachers face significant challenges due to the lack of modern beekeeping equipment for practical lessons.	100	3.2	.956	HE
No adequate professional development for teachers on current apiculture practices, is limiting effective teaching of the topic.	100	3.2	.744	HE
The absence of functional school apiaries makes it difficult to provide hands-on experiences for students in apiculture lessons.	100	3.4	.974	HE
Limited access to updated instructional resources on apiculture hinders teachers from delivering relevant and engaging lessons on the topic	100	3.1	1.029	HE
Teachers find it difficult to stimulate student interest in apiculture due to the lack of engaging practical activities.	100	3.3	1.054	HE
The allocated time in the syllabus is insufficient for covering both theoretical knowledge and practical skills in apiculture.	100	3.3	.810	HE
Teachers lack confidence in teaching the biological and ecological aspects of honeybees, affect the depth of instructions given.	100	2.9	1.020	HE
Grand Mean		3.2	.941	HE

Key: X = Mean, SD = Standard Deviation,

HE - High Extent = 2.50 – 3.49

The data presented in Table 5 revealed that the mean values of all the seven items ranges from 2.95 to 3.36, while the Standard Deviation value of the seven items ranges from .744 to 1.054. On the whole, the grand mean of 3.19, was within the real limit of 2.50 – 3.49; indicating that the respondents generally agreed that Agricultural Science teachers face difficulties in teaching apiculture in secondary schools in Bayelsa State to a high extent. The overall Standard Deviation of .938 indicates that the respondents have corresponding view on the difficulties faced by Agricultural Science teachers in teaching apiculture in secondary schools in Bayelsa State.

Research Question Two

To what extent do teachers face difficulties in teaching agricultural engineering and mechanisation as a topic as perceived by Agricultural Science teachers in the senior secondary schools in Bayelsa state?

Table 6: Mean and standard deviation scores of respondents on perceived difficulties faced by Agricultural Science teachers in teaching Agricultural engineering and mechanisation.

Item	N	X	SD	Decision
Teaching students how to operate and maintain farm machinery is easy with availability of farm machines and equipment.	100	3.0	1.009	HE
There are inadequate practical resources to teach soil tillage techniques using modern mechanized tools in schools.	100	3.2	1.011	HE
Teachers struggle to teach irrigation systems and farm power management due to a lack of functional models or equipment in the school.	100	3.1	1.020	HE
Inadequate training in the operation of modern agricultural machines affects teachers' ability to teach mechanisation.	100	3.1	1.120	HE
Teaching students about post-harvest technologies and storage systems poses a major challenge due to its complexity.	100	3.3	.802	HE
Teachers lack exposure to modern farm power technologies, making it difficult to explain energy usage in agriculture.	100	3.2	.822	HE
The limited time allocated for teaching agricultural engineering/mechanisation topics reduces the effectiveness of practical lessons.	100	3.1	1.010	HE
Grand Mean		3.1	.7677	HE

Key: X = Mean, SD = Standard Deviation,

HE - High Extent = 2.50 – 3.49

The data presented in Table 6 revealed that the mean values of all the seven items ranges from 3.01 to 3.32, while the Standard Deviation value of the seven items ranges from .822 to 1.120. On the whole, the grand mean of 3.13, was within the real limit of 2.50 – 3.49; indicating that the respondents generally perceived that Agricultural Science teachers face difficulties in teaching agricultural engineering and mechanisation in secondary schools in Bayelsa State to a high extent. The overall Standard Deviation of .7677 indicates that the respondents have corresponding view on the perceived difficulties faced by Agricultural Science teachers in teaching agricultural engineering and mechanisation in secondary schools in Bayelsa State.

Test of Hypotheses

Ho₁: There are no significant difficulties faced by teachers in teaching apiculture as a topic as perceived by Agricultural Science teachers in the senior secondary schools in Bayelsa state.

Table 7: Chi-Square Test of significance on the perceived difficulties faced by Agricultural Science Teachers in Teaching Apiculture as a topic in secondary schools in Bayelsa State

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	11.537 ^a	24	.021
Likelihood Ratio	11.660	24	.020
Linear-by-Linear Association	1.689	1	.194
N of Valid Cases	700		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 93.00.

From the top row of the output table, it was observed the Pearson chi-squared statistic, = 11.537, degrees of freedom 24, corresponding to $p < 0.021$. The null hypothesis was rejected at $\alpha = .05$. In other words, the null hypothesis is rejected at $p = .021$ and it is therefore, concluded that there are significant difficulties faced by teachers in teaching apiculture as a topic as perceived by Agricultural Science teachers in the senior secondary schools in Bayelsa state.

Test of Hypothesis Two

Ho₂: There are no significant difficulties faced by teachers in teaching as a agricultural engineering and mechanisation topic as perceived by Agricultural Science teachers in the senior secondary schools in Bayelsa state.

Table 8: Chi-Square Test of significance on the perceived difficulties Faced by Agricultural Science Teachers in Teaching Agricultural Engineering and mechanisation as a topic in secondary schools in Bayelsa State

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	205.208 ^a	24	.000
Likelihood Ratio	207.410	24	.000
Linear-by-Linear Association	34.010	1	.000
N of Valid Cases	700		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 62.60.

From the top row of the output table, it was observed the Pearson chi-squared statistic, = 205.208, degrees of freedom 24, corresponding to $p < .001$. The null hypothesis was rejected at $\alpha = .05$. In other words, the null hypothesis is rejected at $p < .001$ and it is therefore, concluded that there are significant difficulties faced by teachers in teaching Agricultural Engineering and mechanisation as a topic as perceived by Agricultural Science teachers in secondary schools in Bayelsa State.

Discussion

The findings on perceived difficulties faced by Agricultural Science teachers in teaching apiculture in secondary schools in Bayelsa State were revealed in Table 5. The result indicated that respondents identified item 1-7 as perceived difficulties faced in teaching apiculture in

secondary schools. It was also found that these difficulties significantly affect the teaching of apiculture as a topic in the secondary schools Agricultural Science syllabus as demonstrated in the Chi-square result in table 7. The finding of the study conform to that of Thompson and Edwards (2020) who stated that challenges faced by Agricultural Science teachers included limited access to beekeeping equipment, lack of practical experience among teachers, and inadequate instructional materials for teaching apiculture. Ndiaye and Sarr (2019) on their part discovered that the lack of updated teaching materials on apiculture, insufficient teacher training, and limited student interest in beekeeping were major challenges.

Furthermore, the respondents accepted that the item 8 – 14 in Table 6 as perceived difficulties faced by Agricultural Science teachers in teaching agricultural Engineering as a topic in secondary schools in Bayelsa State. It was also found that these difficulties significantly affect the teaching of agricultural engineering and mechanisation as a topic in the secondary schools Agricultural Science syllabus as demonstrated in the Chi-square result in table 8. The finding of the study align with that of Anderson and Smith (2020) who revealed that teachers struggled with inadequate access to modern farming machinery, lack of professional development opportunities, and insufficient practical sessions for students. While in their part, Mogale and Tshabalala (2019), discovered that outdated instructional materials, lack of access to mechanised equipment, and insufficient teacher training were the main difficulties faced by Agricultural Science teachers in teaching agricultural engineering.

Conclusion

The study was conducted to interrogate the perceived difficulties faced by teachers in teaching selected topics in the senior secondary school Agricultural Science syllabus in Bayelsa State. Data collected and analysis demonstrated that teachers experience difficulties teaching apiculture and agricultural engineering and mechanisation due lack of necessary tools for teaching the topic. It was therefore concluded that difficulties exist in teaching some selected topics in Agricultural Science syllabus in secondary schools in Bayelsa State, Nigeria.

Recommendations

1. Government should make funding available for the acquisition of relevant agricultural materials and tools, especially in apiculture farming to enhance the teaching of apiculture in secondary schools in Bayelsa State.
2. Instructional material, both traditional and digital should be provided in the schools to foster teaching and learning of all topics in agricultural science syllabus for adequate understanding of students.
3. Sufficient facilities and machinery should be provided to agricultural science teachers to enable them teach agricultural engineering and mechanisation effectively and efficiently in secondary schools in Bayelsa State.

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