

**SENIOR SECONDARY SCHOOL STUDENTS' AWARENESS OF THE PLACE OF
PRACTICAL AGRICULTURAL SCIENCE IN SUBJECT MATTER MASTERY OF
AGRICULTURAL SCIENCE**

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NOVEMBER, 2025.

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**BEING A PROJECT SUBMITTED TO THE DEPARTMENT OF AGRICULTURAL
SCIENCE/FINE AND APPLIED ARTS EDUCATION, FACULTY OF VOCATIONAL
AND TECHNICAL EDUCATION, IN PARTIAL FULFILMENT OF THE
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(ED) IN AGRICULTURAL EDUCATION OF THE UNIVERSITY OF BENIN, BENIN
CITY**

NOVEMBER, 2025

APPROVAL

I, hereby certify that this work was carried out by Godswill Chibuike NSOFOR in partial fulfillment for the award of B.Sc. (ED) degree in Agricultural Education in the Department of Agricultural Science/Fine and Applied Arts Education, Faculty of Vocational and Technical Education, University of Benin, Benin City, Edo State, Nigeria.

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Project Supervisor

Date

CERTIFICATION

We, the undersigned, hereby certify that this work was carried out by Godswill Chibuikwe NSOFOR with the Matriculation Number EDU2203656 from the Department of Agricultural Science/ Fine and Applied Arts Education, Faculty of Vocational and Technical Education, University of Benin, Benin City, Edo State, Nigeria in partial fulfilment of the requirements for the award of Bachelor of Science Degree B.Sc. (Ed) in Agricultural Education of University of Benin, Benin City.

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DEDICATION

This Study is dedicated to the Almighty God, who is my Source of life and granted me wisdom, strength and understanding to complete this study

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ABSTRACT

This study investigated senior secondary school students' awareness of the place of practical Agricultural Science in subject matter mastery of Agricultural Science in Ovia North-East Local Government Area, Edo State. The study adopted a descriptive survey research design and involved a population of 14,264 students from 24 public secondary schools, from which a sample of 390 students was selected using the Taro Yamane formula and simple random sampling technique. Data were collected using a self-structured questionnaire titled Students' Awareness of the Place of Practical Agricultural Science in Mastering Agricultural Science (SAPPASMASQ), validated by experts and tested for reliability, yielding a Cronbach Alpha coefficient of 0.88. The data collected were analyzed using mean and standard deviation.

Findings revealed that students possess a high level of knowledge regarding the importance of Agricultural Science and demonstrate a high level of awareness of the role of practical activities in enhancing their mastery of the subject. The results further showed that exposure to practical Agricultural Science significantly influences students' interest and motivation towards the subject. However, the study also identified that several challenges, including inadequate functional school farms, insufficient farm tools and equipment, limited time allocation for practicals, poor maintenance of facilities, and shortage of qualified teachers, significantly hinder the effective implementation of practical Agricultural Science.

The study concluded that although students' awareness of the importance of practical Agricultural Science is significantly high, the full benefits of practical-based learning are constrained by infrastructural and systemic challenges. It therefore recommends increased investment in agricultural facilities, provision of adequate tools and qualified personnel, and the strengthening of practical-oriented teaching approaches to enhance effective mastery of Agricultural Science among senior secondary school students.

CHAPTER ONE

INTRODUCTION

Background to the Study

The goal of agricultural science, a crucial subject in Nigerian senior secondary education, is to give students the attitudes, abilities, and information needed for socio-economic advancement and agricultural output. This subject's practical component is essential since it allows for experiencing learning through experiments in the lab, cultivation of crops, animal husbandry, and school farm operations (Ogunbameru, 2021). By bridging the gap between theoretical ideas and practical applications, practical agricultural science helps students absorb abstract agricultural concepts through practical application. This is consistent with the constructivist learning theory, which holds that students actively create knowledge by reflection and experience (Vygotsky in Adeola, 2024).

The significance of incorporating real-world experiences into agricultural science education has been emphasized by recent studies. For example, practical agriculture teaching methods are essential for senior secondary school students' self-employment prospects, according to Obiyai and Olisa (2022). The disconnect between theoretical training and the real-world demands of the agricultural industry is another reason why Eje *et al.* (2021) support restructuring the agricultural education curriculum to render it more practical oriented.

Since agricultural science gives students the chance to apply their theoretical knowledge in real-world situations, its practical component is essential for improving comprehension of the subject matter. In contrast to classroom lectures alone, students can better understand concepts like soil fertility and plant growth cycles through actions like soil testing or crop planting (Ikeoji, 2022). According to research, students' academic performance and cognitive engagement in

Agricultural Science are greatly enhanced by engaging in practicals which encourages a better comprehension of difficult subjects like agricultural mechanisation and pest control (Oloruntoba *et al.*, 2020). Furthermore, real-world experiences develop vocational skills, preparing students for agricultural careers and advancing Nigeria's food security objectives (FAO, 2020).

Agriculture remains to be an essential economic activity in Edo State's Ovia North East Local Government Area, where numerous communities depend on farming as their primary source of income. Agriculture is an integral component of the local economy, making effective agricultural education especially vital. However, there are obstacles to the introduction of practical agricultural science in senior secondary schools, such as a lack of resources for teaching, inadequate facilities, and inadequate teacher preparation (Egun, 2024). These obstacles make it difficult for students to participate in practical activities in a meaningful way, which may lead to unfavourable opinions about the subject's applicability. These shortcomings could restrict students' exposure to hands-on learning, which would hinder their ability to grasp the material and grow interested in Agricultural Science. However, students' interest and academic success can be substantially impacted by how they see practical agricultural science. According to Nwankwo and Okeke (2023), students' attitudes towards practical agricultural science are influenced by a variety of factors, such as the availability of resources, the instructors' expertise, and the topic's perceived relevance to their future careers.

Understanding students' awareness of the place of practical agricultural science is important because it affects their motivation, engagement, and career goals. Positive awareness, which are fueled by well-resourced and interesting practical sessions, are linked to better academic results and a higher chance of pursuing careers in agriculture (Olaitan and Omomia, 2020), while negative awareness, which are frequently the result of poorly executed practicals,

can cause apathy and disinterest (Adamu, 2020). Improving educational practices in Ovia North East LGA is crucial in order to align them with the National Policy on Education (NPE in Egun, 2024), which emphasizes practical-based learning to promote agricultural development.

It is crucial to understand how students view practical agricultural science because it can affect their motivation, interest, and possible career choices in agriculture. According to Obaruyi *et al.* (2024), students' attitudes and awareness of the place of agricultural science have a significant impact on their acceptance of the subject. Therefore, evaluating their awareness can help improve the effectiveness and delivery of agricultural science education in senior secondary schools in Ovia North East Local Government Area, Edo State.

Statement of the Problem

Even though practical agricultural science is essential for improving comprehension of the subject topic, its use in senior secondary schools in Ovia North East LGA is still uneven. Students' exposure to hands-on learning is limited in many schools due to a shortage of operational school farms, labs, and qualified teachers (Adamu, 2020). Practical education was hampered by 40% of secondary schools in Edo State lacking access to fundamental agricultural implements, according to a 2022 research (Ikeoji, 2022). Students may view agricultural science as a theoretical subject as a result of this discrepancy between curricular expectations and actual delivery, which could hinder their understanding of important ideas like crop rotation and animal breeding.

At a time when Nigeria aims to diversify its economy through agriculture, the absence of worthwhile practical experiences could result in a lowering of students' interest and motivation and possibly discouraging them from pursuing careers in agriculture (Adeola, 2024). Inadequate practical experience might lead to negative attitudes that worsen disengagement and poor

academic achievement. In light of these difficulties, it is necessary to look into how senior secondary school students in Ovia North-east are aware of the place of practical agricultural science in the mastery of the subject matter affect their comprehension of the subject and identifying obstacles to successful application.

Purpose of the Study

The main purpose of this study was to examine students' awareness of the place of practical Agricultural Science in mastering Agricultural science in Senior Secondary Schools in Ovia North-east LGA, Edo State. The study specifically determined:

1. Students' knowledge of the importance of Agricultural Science.
2. Students' awareness of the role of practical agriculture in enhancing their mastery of the subject.
3. The relationship between students' exposure to practical agriculture and their interest in Agricultural Science.
4. The challenges hindering the effective implementation of practical Agricultural Science in schools.

Research Questions

This study was guided by the following research questions:

1. To what extent are senior secondary school students knowledgeable about the importance of Agricultural Science?
2. To what extent are senior secondary school students aware of the place of practical Agricultural Science as a tool for enhancing mastery of Agricultural science?
3. To what extent does exposure to practical Agricultural Science influence students' interest in the subject?

4. To what extent do challenges hinder the effective implementation of practical Agricultural Science in senior secondary schools in Ovia North-East LGA, Edo State?

Significance of the Study

This research will be of immense value to a wide range of stakeholders in the educational and agricultural sectors. These include senior secondary school students, Agricultural Science teachers, school heads and administrators, curriculum designers, parents, educational policymakers, non-governmental organizations (NGOs) involved in agricultural and science education, the Ministry of Education, and future researchers.

Students, as the core focus of this study, will gain a deeper awareness of how practical Agricultural Science enhances their understanding and retention of subject matter.

Teachers will benefit from a better understanding of students' awareness of practical agricultural science influences their understanding of Agricultural science, which may guide them in adopting more engaging and effective teaching techniques that emphasize practical experience. School administrators and curriculum planners will find the study useful in identifying areas that require improvement in terms of facilities, resources, and curriculum alignment with practical activities.

Parents will be better informed about how practical learning contributes to their children's academic success and career orientation.

Policy formulators and the Ministry of Education will find the data helpful for designing or refining educational policies that support the teaching of Agricultural Science through practical methods.

Additionally, NGOs and researchers will find the findings relevant for advocacy, further studies, or community-based agricultural education programs.

To ensure that these benefits reach the intended groups, the study's findings will be communicated through various formal and informal channels. Copies of the research report will be made available to schools and educational authorities in Ovia North-East LGA. Workshops, seminars, and staff development programs may be organized to present key findings to teachers and school administrators. The data may also be shared with policymakers through reports and policy briefs directed to the Ministry of Education and other relevant agencies. The study may further be published in academic journals or presented at educational conferences, making it accessible to scholars and researchers. Community outreach efforts and partnership with NGOs can also help in translating the findings into practical improvements in Agricultural Science education.

Scope and Delimitation of the Study

The study covered students in Senior Secondary School (SSS) classes 1 through 3 with a particular focus on their awareness of the place of practical Agricultural Science and their understanding of its function in the understanding of Agricultural Science. It focused on students' awareness of the practical aspect of Agricultural Science, particularly its role in enhancing subject matter understanding. The study examined facility availability, teaching methodologies, and implementation challenges, excluding other subjects and junior secondary school levels. The study was delimited to senior secondary school students in secondary schools in Ovia North East Local Government Area, Edo state.

Definition of Terms

The following term was operationally defined:

Subject Matter Mastery: Subject matter mastery means the extent to which students effectively understand, internalize, and can competently apply concepts, theories, and skills taught in

Agricultural science. It emphasizes deep learning, where students not only recall agricultural principles, but also demonstrate the ability to use them in problem-solving, practical demonstrations, and real-world agricultural situations. Mastery is strengthened when practical agricultural science is integrated into teaching, enabling students to link classroom knowledge with practical experiences, thereby ensuring retention, comprehension, and skill acquisition.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

The review of literature related to this study was organized by the following subheading.

- Theoretical Framework
- Students' Awareness of the role of Practical Agricultural Science in Subject Mastery
- Benchmark requirements for the teaching of Practical Agricultural science
- Availability and adequacy of practical learning resources in Agricultural Science
- Teaching methods in Agricultural science
- Teacher competency and Teaching Approach in Practical Agricultural Science
- Subject mastery through Experiential Learning in Agricultural Science
- School and Community Support Systems in Practical Agricultural Science
- Review of Related Empirical Studies
- Summary of the Reviewed Literature

Theoretical Framework

The theoretical framework forms the scholarly backbone of this study, connecting its aims to established academic ideas that shape the review and understanding of outcomes. This research, which explores how public senior secondary school students are aware of the place of practical Agricultural Science in mastering Agricultural science and recognize its value in building expertise in the field, is based on three main learning theories: Kolb's Experiential Learning Theory as the central guide, supported by Constructivist Learning Theory from Piaget and Vygotsky, and Bandura's Social Cognitive Theory. The following theories are explored to guide this study.

Kolb's (1984) postulated Experiential Learning Theory states that knowledge develops through a repeating cycle of hands-on action, thoughtful review, idea formation, and testing in practice. In Agricultural Science, this appears in activities like planting crops or caring for animals. The process starts with direct participation (concrete experience), continues with considering what happened (reflective observation), involves creating general principles (abstract conceptualization), and finishes with using those principles in new situations (active experimentation). This view stresses that well-designed practical work in agriculture boosts deeper insight and lasting memory, making it a key path to strong command of the subject for senior secondary students.

Constructivist Learning Theory, first outlined by Piaget (1954) and advanced by Vygotsky (1978), holds that people create knowledge through active exchanges with their world. Piaget (1954) saw mental growth as moving through levels where individuals explore and make sense of their setting. Vygotsky (1978) brought in the idea of guided support in learning, stressing teamwork and help from others. For this study, students improve their knowledge of Agricultural Science by working together on tasks, watching demonstrations, and getting direction during hands-on work, which helps them grasp ideas better than through ideas alone.

Bandura's (1986) Social Cognitive Theory strengthens the overall structure by explaining that learning happens in group settings through watching, copying, and following examples, with belief in personal ability as a core part. In Agricultural Science classes, students' thoughts about practical work can grow positive when they see teachers, friends, or community members succeed in farming. Stronger belief in their skills leads to more active joining in, which raises their overall ability in the subject. This theory also looks at how surroundings influence actions and outlooks, making it well-suited for studies on how people see and understand things.

Together, these theories build a firm base for the research. Kolb's (1984) Experiential Learning Theory, at the heart, explains the ongoing loop of learning from doing, while Constructivism (Piaget, 1954; Vygotsky, 1978) focuses on the active role in forming knowledge through contact, and Bandura's (1986) theory covers effects from watching others and building confidence. As a group, they show how practical Agricultural Science influences student views and supports strong learning among public senior secondary school students in Ovia North-East Local Government Area, Edo State.

Student Awareness of the role of Practical Agricultural Science in Subject Mastery

Awareness refers to students' understanding of why practical Agricultural Science matters and it is a key factor in their academic progress. When learners realize that practical tasks (like crop planting, soil testing, or equipment use) reinforce classroom theory, they become more invested in both learning processes. Effective awareness elevates participation and strengthens content mastery (Obiyai & Olisa, 2022).

When practical sessions are thoughtfully structured and linked to theory, students perceive them as purposeful learning opportunities. Obiyai and Olisa (2022) highlighted that students who recognize the connection between hands-on activities and classroom concepts demonstrate greater mastery. Their awareness transforms agricultural tasks from chores into meaningful lessons, improving understanding and retention.

Teacher approach also significantly shapes student awareness. According to Samuel *et al.* (2022), educators who articulate the purpose behind each practical activity enhance student motivation. By explaining how a soil analysis experiment, for example, illustrates water retention or nutrient availability in crops, teachers help students appreciate the lessons' actual value leading to better comprehension and exam performance.

Resource availability further reinforces awareness. Abdulmumini *et al.* (2021) found that when tools are functional and regularly used, students are more likely to see practical lessons as legitimate learning experiences. Conversely, poorly available or broken equipment leads students to question the importance of practical work and disengage from agricultural courses.

Incorporating technology into practical lessons can deepen awareness. Ogunjobi and Owoseni (2025) observed that digital simulations and audio-visual aids helped students visualize agricultural processes, such as irrigation systems or crop rotation techniques. This approach clarified abstract concepts and emphasized the real-world value of practical work, increasing students' mastery and performance.

Awareness is also boosted by demonstrating career relevance. Osuntade *et al.* (2021) showed that when students understand the diverse opportunities in agribusiness or farm management, they recognize practical lessons as foundational skills for their futures. This career-oriented perspective motivates learners to engage deeply with both theory and practice. Furthermore, extended practical exposure through internships or farm-based programs fostered robust awareness. Yusuf *et al.* (2022) found that learners who spent time on real farms developed a stronger understanding of Agricultural Science concepts, which translated into higher mastery and satisfaction.

Benchmark Requirements for the Teaching of Practical Agricultural Science

Delivering practical Agricultural Science in Nigerian senior secondary schools calls for clear, measurable benchmarks that align with recognised national standards, ensure safety, and promote active learning. According to the Minimum Standards of the National Senior Secondary Education Commission (NSSEC, 2025), schools are expected to meet requirements in areas such as teacher qualifications, curriculum coverage, facility maintenance, and safety procedures. In

addition, the Minimum Standards for Safe Schools developed by the Federal Government of Nigeria in partnership with UNICEF (2024) highlight the importance of safe and supportive environments for hands-on learning. These safety provisions include proper risk assessment, availability of first-aid, secure storage for tools and chemicals, and personal protective equipment for learners. At the same time, practical teaching should be guided by the competencies assessed in the West African Examinations Council's (WAEC) Agricultural Science Paper 3, as outlined in the 2020 Chief Examiner's Report, to ensure classroom and field activities prepare students for formal assessment (WAEC, 2020).

An essential benchmark is the presence of competent teaching personnel. Every school should employ at least one Agricultural Science teacher who is fully registered with the Teachers Registration Council of Nigeria (TRCN) and engages in continuous professional development (NSSEC, 2025). In addition, trained farm assistants or field aides are necessary to help maintain the school farm, oversee safety in practical work, and assist in managing agricultural equipment. Recent studies (Ochelle *et al.*, 2023; Dumbiri & Gideon, 2025) have stressed that support staff play an important role in improving the efficiency and safety of practical sessions.

Well-developed infrastructure is also vital. Schools are encouraged to maintain a functional "land laboratory" large enough to accommodate different crop cycles and small livestock units. Facilities should include demonstration plots, seedbeds, and areas for animal care, all supported by a dependable water supply, secure storage for produce and tools, and sheds for equipment maintenance. The consistent availability and use of these resources have been linked to better learning outcomes in Agricultural Science (Ochelle *et al.*, 2023). Furthermore, instructional tools such as soil-testing kits, weighing devices, hand tools, and protective gear should be provided in quantities that ensure all students can actively participate. Research has

shown that having adequate resources, not just minimal availability, makes a significant difference in student engagement and achievement (Adepoju & Agwu, 2021; Dumbiri & Gideon, 2025).

Effective teaching of practical agriculture also requires a well-structured learning process. Lessons should follow a sequence that allows students to experience the full production cycle starting from preparation, through implementation, and ending with evaluation and application. This model supports deeper understanding, better retention, and more positive attitudes towards the subject (WAEC, 2020; Dumbiri & Gideon, 2025). Practical skills should be assessed regularly using clear rubrics that evaluate safety, procedure, accuracy, record-keeping, and quality of output, all linked to national examination standards (Dumbiri & Gideon, 2025).

Safety measures form another critical benchmark. Before practical sessions, teachers should carry out risk assessments, brief students on safety protocols, and ensure supervision ratios that are appropriate for the activities. This approach, consistent with the Safe Schools framework (Federal Government of Nigeria & UNICEF, 2024), should be supported with accessible personal protective equipment such as boots, gloves, aprons, and goggles. Secure storage for hazardous tools and agrochemicals must also be maintained under quality assurance checks (NSSEC, 2025).

Incorporating technology can further enhance the delivery of practical lessons. Digital tools such as instructional videos, simulations, and multimedia records of farm activities can make learning more interactive and improve outcomes (Ogunjobi & Owoseni, 2025). Schools may also strengthen their resources through partnerships with local farms, agricultural extension agencies, and agribusiness enterprises, which can provide additional expertise, equipment, and learning opportunities (Nwankwo *et al.*, 2025).

Finally, quality assurance systems are important for maintaining standards. School departments should conduct termly reviews of practical facilities, safety logs, and equipment inventories, supported by inspections from relevant authorities and periodic Safe School drills (NSSEC, 2025; Federal Government of Nigeria & UNICEF, 2024). Equity should also be a guiding principle, ensuring that male and female students have equal opportunities to participate in all aspects of practical agriculture. Evidence suggests that when access is balanced, there is no gender-related disadvantage in student performance in Agricultural Science (Ogunjobi & Owoseni, 2025). Together, these benchmarks offer a comprehensive guide for ensuring that practical Agricultural Science in public senior secondary schools in Ovia North-East LGA is safe, resource-driven, inclusive, and aligned with national education and assessment standards.

Availability and Adequacy of Practical Learning Resources in Agricultural Science

Across Nigeria, the form and quality of hands-on Agricultural Science depend first on whether schools actually possess the spaces and tools that make “practical” work possible. School farms or land laboratories, basic implements for crop and animal husbandry, safe storage, water supply, and teacher capacity to supervise authentic tasks. Recent school-level studies in different regions consistently report shortfalls. In Benue State, a survey of 363 senior secondary students found that “agricultural land laboratories” (school farm plots structured for experiments) were unevenly available and, where present, underutilized for skill acquisition; the authors link this to weak provisioning, insufficient inputs, and scheduling constraints that limit repeated practice (Ochelle *et al.*, 2023). Similarly, evidence from South-East Nigeria shows that while some hand tools and visual aids are present, standard laboratories and essential items for soil and plant investigations (e.g., augers, pH meters, graduated rulers) are often missing, constraining the depth and frequency of practical activities (Abubakar, 2023). These resource gaps matter because

students' willingness to participate and their mastery of procedures typically rise when facilities are accessible, safe, and adequate for repeated use over time.

Beyond individual schools, system rules now set clearer expectations for minimum resources. Nigeria's National Senior Secondary Education Commission (NSSEC) issued the 2025 Minimum Standards, which specify that senior secondary schools must maintain adequate infrastructure, utilities, and equipment to deliver subject-based practicals, with explicit tables and guidance tying facilities to intended learning outcomes. For Agricultural Science this includes functional practical spaces (e.g., farms/plots or laboratories), access to tools and consumables, and safe, supervised environments for handling living organisms and agricultural inputs (NSSEC, 2025). While the standards are not a procurement list, they codify what "adequate" means in practice and provide a benchmark for school inspection and state-level planning.

Adequacy also has a safety dimension. Since 2021, the Federal Ministry of Education's Minimum Standards for Safe Schools (MSSS) supported by UNICEF and updated through 2024 monitoring require schools to ensure safe, hazard-aware practical environments, including basic WASH services, first-aid and emergency procedures, and risk-reduction measures for workshops and laboratories. Where schools lack secure storage, fencing around plots, water points, or emergency kits, practical work is curtailed or restricted, reducing students' exposure to authentic tasks (Federal Ministry of Education, 2021; UNICEF, 2024). In states applying the MSSS, compliance checks now intersect with subject delivery, so that, for example, an agricultural plot without safe water access or perimeter control may fail both safety and instructional adequacy tests.

Where resources are present and managed as "land laboratories," outcomes improve. Studies that contrast field-based and classroom-only approaches report higher achievement when

students rotate through structured, repeatable tasks on the school farm (e.g., soil testing, nursery establishment, simple animal health routines) under teacher supervision and with sufficient inputs; the pedagogical payoff arises from iterative practice and observation in situ (Ochelle *et al.*, 2023; Abubakar, 2023). Conversely, when schools rely on demonstrations without student handling of tools or specimens, practical assessments drift toward theory, which recent benchmarking work identifies as a national weakness. A 2025 comparative analysis of Nigeria’s SSCE practicals and Cambridge IGCSE shows Nigerian assessments still emphasize identification and drawings over hands-on investigations, attributing this gap partly to limited infrastructure, consumables, and trained assessors at school level; the paper recommends strengthening field-based tasks, improving logistics for inputs, and building teacher capacity so schools can run authentic practicals throughout the term, not just before examinations (Dumbiri & Gideon, 2025).

Recent field evidence from the South-East further details the pattern of “partial availability”: schools may have some tools and visual materials but lack critical measurement and testing devices, irrigation or water for hygiene, and protected spaces for seedlings or small livestock. This partiality leads teachers to scale back laboratories to observation-only sessions adequate for recall, inadequate for skill mastery. Where schools addressed these bottlenecks by setting aside fenced plots, scheduling double-period practicals, and ring-fencing small budgets for inputs—student participation and confidence improved (Abubakar, 2023). Complementary case reports suggest that, when schools embed practicals into weekly routines with guaranteed access to the farm plot, even modest kits (hand tools, measuring tapes, seed, pH strips) can sustain meaningful practice if safety and supervision are assured (Ochelle *et al.*, 2023).

The implication for Ovia North-East LGA is straightforward: “availability” must be read as a combination of physical assets (plots, tools, storage), recurrent inputs (seed, feed, reagents, PPE), human capacity (teachers able to plan and assess practicals), and safety infrastructure (water, first-aid, controlled access). “Adequacy” means these elements are present in the right quantities, are safe to use, and are timetabled so every student repeatedly performs core tasks across crop and animal units. Current national benchmarks (NSSEC Minimum Standards) and cross-cutting safety standards (MSSS) already supply a policy frame; local diagnosis should therefore focus on whether each public senior secondary school has (1) a functional, risk-managed land laboratory or equivalent plot; (2) an inventory of basic implements and measurement/testing devices; (3) predictable consumable budgets; and (4) teachers supported to run hands-on sessions and collect evidence of student performance. Where any strand is missing, perceptions of practicality and the likelihood of true subject-matter mastery both decline.

Teaching Methods in Agricultural Science

Strong strategies for teaching Agricultural Science link theory to practice. This matters in secondary schools. Students build skills for daily farming work. Recent studies in Nigeria show these methods affect student views on practical parts. They also shape overall understanding. This applies to public senior high schools in places like Ovia North East Local Government Area in Edo State.

One main tactic uses direct involvement in tasks. It immerses learners in real agricultural steps. This advances proficiency and subject control. For example, action-oriented learning guides students through site choice, soil prep, seed planting, weed removal, and harvest collection. Teachers often show examples (Onanuga *et al.*, 2021). This method brings big gains in student attitudes to agriculture. It fosters lasting memory, positive outlooks, and motor skills

over standard ways. To back this, model fields and close guidance turn ideas into real experiences. They build mastery in growing methods (Amadi & Adejoh, 2020).

Another technique stresses discovery-focused and challenge-solving methods. It inspires students to explore farming topics with questions and tests. These allow learners to ask queries and do independent checks on natural events in agriculture. They nurture critical thought and systematic skills (Osagiede *et al.*, 2024). Practices like brainstorming ideas and urging questions help active finding and deeper grasp. This fits early secondary levels (Ekenta *et al.*, 2025). Handling real issues through trials sharpens assessment and sparks interest. Research on applied teaching shows this (Obiyai & Olisa, 2022).

From this, assignment-centered instruction draws students into long undertakings on actual farming concerns. It includes joint work on true dilemmas. Examples are designing tests and sharing results. These build team synergy, originality, and planning know-how (Osagiede *et al.*, 2024). Grouping participants for functional exercises identifies key abilities from the outline. It lifts competence and memory via engaged roles (Salisu & Ajiya, 2022). More support for task-oriented tactics pairs them with shows. This confirms value in gaining knowledge and boosting participation (Danladi *et al.*, 2024).

Mixing digital resources into classes gives captivating and easy instructional moments. Modern teaching uses virtual setups, engaging software, mobile apps, and immersive tools allowing students practice growing online. This advances analysis and tech skills (Osagiede *et al.*, 2024). Adding visual elements like devices and materials aids image-based retention in the field (Ekenta *et al.*, 2025). Showing filmed farming sequences illustrates operations. It boosts drive and school success (Amadi & Adejoh, 2020).

Team-based and conversation-oriented instruction pushes shared interactions for group insight into ideas. This covers combined projects and talks that spur involvement, cohesion, and logical checks in functional agriculture (Obiyai & Olisa, 2022). Forming groups and using debate ways amplifies dedication and skills in practical sessions (Danladi *et al.*, 2024). Joint dialogues and personal experiences show value for mutual grasp in secondary spots (Ekenta *et al.*, 2025).

Site excursions and immersion tactics give contact with true operations. Trips to full facilities build interest, info keep, and reasoned analysis (Amadi & Adejoh, 2020). Direct interactions via visits and experiments heighten zeal and learning relevance (Osagiede *et al.*, 2024). These supply visible and applied views. They aid ability growth for self-reliance (Obiyai & Olisa, 2022).

These tactics offer benefits. Yet hurdles like limited assets and teacher skills remain. Ideas include making alternative gear, better oversight, and set times for functional lessons in local schools (Salisu & Ajiya, 2022). Providing resources like tools and spaces is key but often lacks. This blocks success (Danladi *et al.*, 2024). Suggestions cover training for educators to blend methods well.

Analyzed tactics range from direct engagement and exploratory ways to assignment-driven, digitally aided, team-oriented, and excursion-based strategies. They strengthen applied abilities and grasp of the role in proficiency. Using them in public secondary schools in Ovia North East LGA could lift student views and results. This bridges gaps in experiential education.

Teacher Competency and Teaching Approach in Practical Agricultural Science

Competent teaching in Agricultural Science requires more than just subject knowledge, it demands an ability to deliver lessons that are practical, relevant, and engaging for learners. In the

context of senior secondary education, effective Agricultural Science instruction is rooted in the teacher's capacity to translate theory into hands-on experiences that students can apply and internalize. This calls for both pedagogical versatility and a sound understanding of modern agricultural practices.

A well-rounded teacher must be able to adopt teaching strategies that actively involve students in their learning process. Agricultural Science thrives on practical engagement. Demonstrations, student farm projects, cooperative group tasks, and classroom experiments are fundamental activities that promote deeper learning. These methods help students connect with real agricultural scenarios, developing both technical skills and confidence. Rather than relying on memorization, learners gain competence by doing, observing, and collaborating outcomes directly shaped by the teacher's approach and planning (Abujaja *et al.*, 2022).

Incorporating digital tools into the learning process further enhances teaching quality. Teachers who integrate ICT such as animated demonstrations, digital diagrams, virtual farm walkthroughs, or instructional videos make complex topics more accessible. Concepts like greenhouse technology, soil nutrient mapping, and crop disease identification become clearer and more engaging when presented with the support of digital media. ICT does not replace hands-on activities, but it complements them by reinforcing understanding through visualization and interactivity (Ogunjobi & Owoseni, 2025).

Professional growth is another key component of teaching competency. Educators who take part in ongoing development such as workshops, training on self-employment skills, and exposure to current agricultural technologies build their instructional repertoire and adapt to modern challenges. This ongoing learning ensures they are capable of introducing real-world agricultural trends into their lessons and guiding students toward both academic achievement and

practical self-reliance (Obiyai & Olisa, 2022). When teachers model adaptability and innovation, students are more likely to view agriculture as a dynamic and rewarding discipline.

Competent teachers are also effective managers of the learning environment. Agricultural Science often requires managing tools, school farms, safety procedures, and group coordination. A well-structured practical session depends on the teacher's ability to organize tasks, supervise hands-on work, and ensure proper use of resources. Classroom management in this context extends to field supervision, student motivation, and time efficiency. These skills are essential for delivering quality instruction in settings where resource constraints can easily disrupt learning (Ogunjobi & Idowu, 2024).

While teaching skill is critical, supportive institutional structures must also exist. Timetables must allocate adequate hours for practical work, and administrators need to provide flexibility for adapting the curriculum to local agricultural realities. Teachers function best when they operate in environments that recognize and support the practical demands of Agricultural Science. Without this support, even the most skilled educators struggle to deliver effective hands-on experiences (Mazza, 2023).

Ultimately, the intersection of teacher competency and innovative instructional methods defines how well students learn Agricultural Science. By adopting learner-centered strategies, leveraging digital tools, committing to professional development, and efficiently managing the classroom, teachers can help students gain the knowledge, confidence, and skills necessary for agricultural productivity and self-employment. This approach transforms Agricultural Science from a theoretical subject into a practical and empowering educational experience.

Subject Mastery through Experiential Learning in Agricultural Science

Mastering Agricultural Science at the senior secondary school level requires more than classroom instruction, it demands immersive, practical involvement in real farming tasks. This form of learning, known as experiential learning, enables students to acquire skills, reinforce theoretical knowledge, and retain information more effectively. Rather than relying solely on textbooks and lectures, students actively participate in the learning process through observation, experimentation, and reflection. These activities deepen their comprehension and bridge the gap between agricultural theory and practice.

Experiential learning involves learning by doing. In the context of Agricultural Science, this means students engage in hands-on activities such as soil testing, planting, irrigation, livestock care, and pest management. These tasks provide learners with opportunities to apply knowledge in authentic settings, which enhances understanding and long-term retention. The process fosters critical thinking as students are required to make decisions, solve real-world problems, and evaluate outcomes. According to Nwuba et al. (2022), this model promotes the acquisition of science process skills and improves subject mastery because students learn through exploration and inquiry.

Moreover, experiential learning motivates learners by making Agricultural Science relevant to their everyday environment. When students can directly relate their school work to the farming activities practiced in their communities, they develop a greater interest in the subject. This relevance reinforces classroom learning and positions agriculture as a meaningful and rewarding subject. Sagario and Versano (2023) noted that students who underwent experiential instruction in crop production were more confident and competent in applying their

knowledge to real-life scenarios. This transformation from passive receivers of information to active participants in their learning journey is what leads to subject mastery.

Another critical advantage of experiential learning is its contribution to skill acquisition and entrepreneurial readiness. Students who consistently work on school farms or participate in supervised agricultural projects build the competence required for productive farming and agribusiness. This hands-on approach equips them with the know-how to become self-reliant, an essential objective of Agricultural Science education in Nigeria. Onyesom *et al.* (2025) emphasized that experiential education contributes to food security by preparing students to engage in productive farming beyond school.

Subject mastery also benefits from the reflective element of experiential learning. After completing agricultural tasks, students are encouraged to analyze their actions, understand successes and failures, and draw lessons for future application. This reflection promotes deeper learning and personal responsibility, ensuring students internalize concepts rather than memorize them. The experiential cycle comprising planning, action, observation, and reflection helps learners consolidate their knowledge and make meaningful connections across different agricultural topics.

Incorporating experiential learning into Agricultural Science instruction demands institutional support. Schools need structured farm spaces, materials, skilled teachers, and time in the timetable dedicated to practical sessions. Teachers, in particular, must be trained not just in agricultural techniques but also in guiding students through reflective learning processes. Without these structures, the benefits of experiential learning cannot be fully realized, and students are left with fragmented knowledge that lacks real-world relevance.

Ultimately, experiential learning serves as the bridge between knowing and doing. It allows students to actively engage with agricultural knowledge and transform it into usable skills, fostering confidence, independence, and deep understanding. In the context of Agricultural Science, this model of learning is not just beneficial, it is essential for true subject mastery in today's complex and dynamic agricultural landscape.

School and Community Support Systems in Practical Agricultural Science

The effective teaching of Practical Agricultural Science in senior secondary schools requires strong structural and moral support from both the school system and the surrounding community. These support systems ensure that students not only receive theoretical knowledge but also gain the necessary hands-on experience to understand agricultural processes and apply them meaningfully. Practical learning in agriculture is grounded in the presence of enabling environments, and without such environments, even the best-designed curriculum becomes ineffective.

Within the school system, administrative support plays a critical role in facilitating practical agricultural education. School heads and agricultural science departments must ensure the availability of land for farming activities, allocate funds for tools and inputs, and include farm work in the school timetable. According to Mazza (2023), schools that prioritize practical sessions through time management and administrative supervision create better engagement platforms for students. This indicates that school leadership has a direct impact on how effectively Agricultural Science is delivered, particularly when it comes to practical application. In addition to farm infrastructure, schools must also provide organizational support. The presence of a functioning school farm that is well-managed and supervised allows students to engage in real-life agricultural practices such as land preparation, planting, and harvesting.

Ogunjobi and Idowu (2024) observed that students in schools with structured farm operations demonstrated higher learning outcomes, largely due to regular and supervised hands-on experiences. This proves that institutional planning, teacher coordination, and availability of physical resources are interrelated elements that sustain practical agricultural education within the school setting.

However, schools cannot operate in isolation. Community engagement is essential to supplement what schools provide and extend agricultural education into the broader social context. Local farmers, agricultural extension officers, and cooperative societies often bring invaluable experience into the learning process. Their direct involvement offers students access to traditional and modern farming methods, creating a balanced exposure that enriches the formal curriculum. Disciplines.ng (2023) reports that schools with established links to local farms benefit from enhanced experiential learning opportunities, which allow students to relate textbook knowledge to field realities.

Community members also support schools by donating land, tools, seeds, and in some cases, labor. This form of social capital provides much-needed reinforcement, particularly in rural areas where school budgets are limited. Koledoye (2023) highlights that several schools across Nigeria have revived their school farms through the help of local communities, leading to better student motivation and improved practical outcomes. These collaborative efforts signal a shared responsibility between schools and communities in shaping the future of agricultural education.

Furthermore, the interaction between students and community members fosters agricultural awareness and career interest. When students see agriculture practiced successfully in their communities and when they are mentored by real-life practitioners, they begin to view

the subject not only as a school requirement but as a pathway to entrepreneurship and food security. Support from parents and community leaders, builds student confidence and validates their interest in agriculture as a viable career. This social reinforcement is often as important as the provision of tools and farm inputs.

To maintain the momentum of support, both schools and communities must engage in structured partnerships. These may include school-community farm committees, periodic evaluation meetings, and transparent planning around shared resources. The Nation (2024) emphasized that the re-establishment of school farms in Nigeria requires not just government policy but continuous involvement from local stakeholders to ensure long-term sustainability. Where trust, communication, and shared responsibility are present, support systems become resilient and effective.

School and community support systems are central pillars in delivering quality practical Agricultural Science education. Schools provide structure, curriculum alignment, and coordination, while communities offer cultural relevance, practical exposure, and resource support. When both systems operate in harmony, students benefit from a rich learning environment that fosters skills acquisition, academic achievement, and lifelong interest in agriculture.

Review of Related Empirical Studies

The effectiveness of practical agricultural science as a teaching tool in Nigerian schools has been widely studied in recent years. Research by Abdulmumini *et al.*, (2022) focused on the availability and use of practical agricultural equipment in three federal colleges of education located in the North-East region of Nigeria. The study sampled 291 students and 72 lecturers and revealed that although equipment was present in most schools, a significant portion was either

nonfunctional or underutilized. About 54% of the schools lacked essential equipment, and only 48% of available tools were being used consistently in teaching. This suggests a clear gap between theoretical teaching and practical exposure. These findings are relevant to the present research as they provide insight into how equipment accessibility might influence students' awareness and understanding of agricultural science in secondary schools within Ovia North-East LGA.

In another study, Ahmadu (2024) examined challenges affecting the delivery of practical agricultural lessons in secondary schools across Kwara State. The study involved 478 agricultural science teachers and identified several constraints, including inadequate facilities, poor funding, limited instructional time, and negative student attitudes. These systemic issues were reported to hinder meaningful engagement with practical agriculture. Drawing from these insights, it becomes imperative to assess if students in Ovia North-East are similarly affected and whether these challenges shape their awareness of the subject's practical relevance.

At the tertiary level, Otekunrin *et al.*, (2022) conducted research involving 260 final-year students of agricultural science at the University of Ilorin to evaluate the outcomes of the Farm Practical Training (FPT) program. The study highlighted that the FPT significantly improved students' comprehension of agricultural principles and increased their interest in real-life agricultural practices. However, inadequate resources and limited supervision were cited as constraints. Although this study focuses on university students, it provides valuable context for understanding how hands-on experience can influence subject mastery, reinforcing the importance of practical exposure in secondary education.

Furthermore, a study by Obiyai and Olisa (2022) surveyed 190 agricultural science teachers in senior secondary schools in Bayelsa State. The study emphasized that practical-based

instructional methods, adequate funding, and integrating agricultural entrepreneurship improved students' skill acquisition and subject engagement. Teachers who employed these strategies noted higher student performance and interest levels. These findings align with the current research as they underscore the significance of effective teaching methods in shaping student outcomes in agricultural science.

Closer to the study area, Obaruyi *et al.* (2024) conducted a study involving 395 senior secondary school students across government-owned schools in Edo State. The research applied the Theory of Planned Behavior to explore students' attitudes and found that most students had a favorable disposition toward agricultural science. However, their interest was closely linked to the perceived relevance of the subject to future careers. The study concluded that increased awareness and improved learning environments could enhance student engagement. Since the present research focuses on Ovia North-East LGA within the same state, it builds directly on these findings by examining how students' awareness of the practical aspect of the subject influences their academic mastery.

Collectively, these studies highlight recurring themes such as limited resources, the gap between theory and practice, and the role of perception in influencing academic engagement. While many of the reviewed works are situated in tertiary institutions or other regions, they offer important implications for secondary school settings. The current research bridges these contexts by specifically exploring how students in Ovia North-East perceive practical agricultural science and how such perceptions, along with awareness of its utility, influence their mastery of the subject.

Summary of the Reviewed Literature

The reviewed literature offers valuable insights into how practical agricultural science influences students' awareness and academic mastery across various educational settings in Nigeria. Several studies consistently highlighted the importance of functional and adequately utilized agricultural equipment as essential for effective practical instruction. For instance, Abdulmumini *et al.*, (2022) reported that although some schools had equipment, many were either non-functional or underused, leading to gaps between theory and practice.

Another key theme across the literature is the influence of institutional and systemic challenges, such as poor funding, limited instructional time, and negative student attitudes. Ahmadu (2024) emphasized how these issues negatively affect practical engagement in secondary schools, while Obiyai and Olisa (2022) demonstrated that integrating entrepreneurship and well-funded instructional strategies leads to better skill acquisition and student performance. Furthermore, tertiary-level research by Otekunrin *et al.* (2022) showed that direct participation in practical agricultural training programs, such as the Farm Practical Year (FPT), significantly enhances students' understanding and interest in agriculture. Although this study focused on university students, it affirmed that hands-on experiences contribute positively to subject mastery, a concept that can be applied at the secondary level.

Most notably, the study by Obaruyi *et al.*, (2024), based in Edo State, the same state as the present study revealed that students had generally positive awareness of agricultural science. However, their interest was highly influenced by their awareness of its relevance to future careers and the quality of learning environments available.

In summary, the literature reviewed underscores that awareness of practical agricultural science are shaped by factors such as availability and use of instructional materials, quality of

teaching strategies, learning environments, and career relevance. These factors collectively impact students' academic engagement and mastery of agricultural science. The present study in Ovia North-East LGA aims to expand on these findings by providing localized data on how awareness of the place of practical agricultural science influence mastery of Agricultural science in senior secondary schools.

CHAPTER THREE

METHODOLOGY

This chapter describes the method and procedure used by the researcher in conducting the study. It is presented under the following sub-headings:

- Design of the Study
- Population of the Study
- Sample and Sampling Technique
- Research Instrument
- Validity of the Instrument
- Reliability of the Instrument
- Method of Data Collection
- Method of Data Analysis

Design of the Study

This study adopted a descriptive survey research design. A descriptive survey is a research method used to gather information at a particular point in time, focusing on the traits and demographic details of a population, rather than analyzing ongoing relationships between variables.

Population of the Study

The population of this study was Fourteen Thousand Two Hundred and Sixty-four (14,264) Senior Secondary School students in all Twenty-four public secondary schools in Ovia North-east LGA, Edo State. The data was collected from the State Secondary Education Board, Edo state, Nigeria (2025).

Table 1: The population of Senior Secondary School Students in Ovia North-east Local Government Area, Edo State

| S/N | SCHOOLS | POPULATION |
|-----|--|------------|
| 1 | Ebomisi Secondary School, Ugbogiobo | 839 |
| 2 | Ezomo College, Ora | 670 |
| 3 | St. Davids Boys Model Secondary School, Evboneka | 461 |
| 4 | Odighi Grammar School, Odighi | 652 |
| 5 | Nifor Secondary School, Nifor | 693 |
| 6 | Utoka Grammar School, Utoka | 827 |
| 7 | Army Day Secondary School, Isiohor | 496 |
| 8 | Iguadolor Secondary School, Iguadolor | 652 |
| 9 | Utese Secondary School, Utese | 600 |
| 10 | Ekosodin Secondary School, Ekosodin | 498 |
| 11 | Oba-erediuwa Secondary School, Obaren | 464 |
| 12 | Osasimwomba Secondary School, Osasimwomba | 595 |
| 13 | Army Day Secondary School, Ekenhuan Barrack | 544 |
| 14 | St. James Grammar School, Afide | 597 |
| 15 | Ore-nolomi Secondary School, Siloko road | 517 |
| 16 | Okada Uram Secondary School, Okada | 817 |
| 17 | Ise Girls School, Utekon | 466 |
| 18 | Okhuo Grammar, Okhuen | 667 |
| 19 | Uhen Mixed Secondary School, Uhen | 745 |
| 20 | Ugbine Secondary School, Ugbine | 502 |
| 21 | Oghede Community Secondary School, Oghede | 426 |
| 22 | Ughoton Secondary School, Ughoton | 780 |
| 23 | Ikpi Grammar School, Ikpi | 405 |
| 24 | Oduna Secondary School, Oduna | 456 |
| | Total | 14264 |

Sample and Sampling Technique

The sample size of the study consisted of Three Hundred and Ninety (390) Students from SSS 1 – SSS 3 in public senior secondary schools in Ovia North-East LGA, Edo State. The sample was derived using the Taro Yamane (1967) formula.

$$n = N / (1 + N \times e^2)$$

Where,

n = Sample size

N = Population size

e = Margin of error (e.g. 0.05 for 5%)

$$n = 14264 / (1 + 14264 \times 0.05^2) = 14264 / (1 + 35.66) = \mathbf{390 \text{ Students}}$$

The students were selected randomly from thirteen public schools in all thirteen wards in Ovia North-east LGA with one public school selected per ward. Thirty (30) students each were selected randomly from each of the thirteen public secondary schools in each ward in Ovia North-East LGA. The respondents were selected using the simple random sampling technique.

Research Instrument

The instrument used for data collection was a self-structured questionnaire titled “Students’ Awareness of the Place of Practical Agricultural Science in Mastering Agricultural Science in Senior Secondary Schools (SAPPASMASQ)”. It was segmented into two sections: Section A and B. Section A contained demographic data of the respondents. Section B contained four sections. The first section contained five questions on students’ knowledge about the importance of Agriculture to education and national development, The second section contained five questions on students’ awareness of the role of practical agriculture in enhancing their mastery of Agricultural Science, The third section contained five questions on the relationship between exposure to practical agriculture and students’ interest in agricultural science and the fourth section contains five questions on challenges hindering effective implementation of practical agricultural science. The rating scale was designed on a 4- point scale with nominal values. It ranged from Very High Extent (VHE), High Extent (HE), Low Extent (LE) and Very Low Extent (VLE).

Validity of the Instrument

The instrument for data collection was validated by the research supervisor and other experts in the Department of Agricultural Education, Faculty of Vocational and Technical

Education, University of Benin, Benin City. The expert's corrections, along with other suggestions for clarity and modification, were incorporated into the final draft of the instrument.

Reliability of the Instrument

In order to determine the reliability of the instrument, the questionnaire was administered to twenty (20) respondents who are not a part of the study. The data collected from the respondents was subjected to Cronbach Alpha's statistics and a reliability coefficient of 0.88 was obtained.

Method of Data Collection

The questionnaire was administered by the researcher to the respondents randomly selected from the population. The researcher personally administered the instrument and provided explanations and clarifications on how to answer the items in the questionnaire to reduce the likelihood of errors in the respondents' answers. The process including administration and retrieval took approximately two weeks to cover all thirteen schools selected for the study.

Method of Data Analysis

The data collected was analyzed using mean (\bar{x}) and standard deviation (SD). The mean (\bar{x}) and standard deviation (SD) were used to answer the research questions. Decision rule for the research questions was based on any calculated mean equal or greater than 2.5 and was regarded as high extent while any calculated mean less than 2.5 was regarded as low extent.

CHAPTER FOUR

PRESENTATION OF RESULTS AND DISCUSSION OF FINDINGS

This chapter deals with presentation of results and discussion of findings. The results of the analysis are presented in the order of the research questions that guided the study.

Presentation of Results

Research Question One

To what extent are senior secondary school students knowledgeable about the importance of Agricultural Science?

Table 2: Mean and standard deviation showing the extent senior secondary school students are knowledgeable about the importance of Agricultural Science

| S/N | Item | N | Mean | SD | Remarks |
|---------------------|---|-----|-------------|-------------|--------------------|
| 1 | Agriculture is important for food production. | 390 | 3.37 | .715 | High Extent |
| 2 | Agriculture provides raw materials for industries. | 390 | 3.58 | .572 | High Extent |
| 3 | Agriculture creates employment opportunities. | 390 | 3.40 | .693 | High Extent |
| 4 | Agriculture contributes to national economic development. | 390 | 3.29 | .696 | High Extent |
| 5 | Agriculture plays an important role in reducing hunger and poverty. | 390 | 3.31 | .897 | High Extent |
| Cluster Mean | | | 3.39 | 0.12 | High Extent |

Note: SD (Standard Deviation), N (Sample Size)

In response to research question one, Table 1 showed that the respondents rated item one to five as high extent with a mean rating ranging from 3.29 to 3.58 while the standard deviation also ranges from .572 to .897. The cluster mean indicates a mean of 3.39. With these results, the above mean score shows that senior secondary school students are knowledgeable about the importance of Agricultural Science to a high extent.

Research Question Two

To what extent are senior secondary school students aware of the place of practical Agricultural Science as a tool for enhancing mastery of Agricultural science?

Table 3: Mean and standard deviation showing the extent senior secondary school students are aware of the place of practical Agricultural Science as a tool for enhancing mastery of Agricultural science

| S/N | Item | N | Mean | SD | Remarks |
|---------------------|--|-----|-------------|-------------|--------------------|
| 6 | Practical agriculture helps me understand classroom theories better. | 390 | 3.44 | .669 | High Extent |
| 7 | Working on a school farm increases my ability to remember Agricultural Science concepts. | 390 | 3.44 | .639 | High Extent |
| 8 | Using farm tools during practicals improves my understanding of their functions. | 390 | 3.31 | .701 | High Extent |
| 9 | Practical sessions make Agricultural Science more interesting to me. | 390 | 3.21 | .750 | High Extent |
| 10 | My performance in Agricultural Science improves when I participate in practicals. | 390 | 3.19 | .715 | High Extent |
| Cluster Mean | | | 3.32 | 0.04 | High Extent |

Note: SD (Standard Deviation), N (Sample Size)

In response to research question two, Table 2 showed that the respondents rated item six to ten as high extent with a mean rating ranging from 3.19 to 3.44 while the standard deviation also ranges from .639 to .750. The cluster mean indicates a mean of 3.32. With these results, the above mean score shows that senior secondary school students aware of the place of practical Agricultural Science as a tool for enhancing mastery of Agricultural science to a high extent.

Research Question Three

To what extent does exposure to practical Agricultural Science influence students' interest in the subject?

Table 4: Mean and standard deviation showing the extent exposure to practical Agricultural Science influence students' interest in the subject

| S/N | Item | N | Mean | SD | Remarks |
|---------------------|--|-----|-------------|-------------|--------------------|
| 11 | Regular exposure to farm activities increases my interest in Agriculture. | 390 | 3.37 | .627 | High Extent |
| 12 | I enjoy Agricultural Science lessons more when practicals are included. | 390 | 3.21 | .667 | High Extent |
| 13 | Practical experiences encourage me to consider agriculture as a future career. | 390 | 3.29 | .723 | High Extent |
| 14 | Exposure to practical agriculture motivates me to study Agricultural Science harder. | 390 | 3.19 | .658 | High Extent |
| 15 | I look forward to Agricultural Science classes because of the practical sessions. | 390 | 3.37 | .793 | High Extent |
| Cluster Mean | | | 3.29 | 0.07 | High Extent |

Note: SD (Standard Deviation), N (Sample Size)

In response to research question three, Table 3 showed that the respondents rated item eleven to fifteen as agreed with a mean rating ranging from 3.19 to 3.37 while the standard deviation also ranges from .627 to .793. The cluster mean indicates a mean of 3.29. With these results, the above mean score shows that exposure to practical Agricultural Science influence students' interest in the subject to a high extent.

Research Question Four

To what extent do challenges hinder the effective implementation of practical Agricultural Science in senior secondary schools in Ovia North-East LGA, Edo State?

Table 5: Mean and standard deviation showing the extent challenges hinder the effective implementation of practical Agricultural Science in senior secondary schools in Ovia North-East LGA, Edo State

| S/N | Item | N | Mean | SD | Remarks |
|---------------------|--|-----|-------------|-------------|--------------------|
| 16 | Inadequacy of functional school farms limits my practical experience. | 390 | 3.44 | .698 | High Extent |
| 17 | Insufficient farm tools and equipment make participation in practicals difficult. | 390 | 3.54 | .609 | High Extent |
| 18 | Inadequacy of time allocated to practicals reduces my opportunity to learn. | 390 | 3.48 | .641 | High Extent |
| 19 | Poor maintenance of school farms reduces the quality of practical learning | 390 | 3.29 | .637 | High Extent |
| 20 | Inadequacy of qualified teachers reduces the effectiveness of practical agriculture. | 390 | 3.46 | .609 | High Extent |
| Cluster Mean | | | 3.44 | 0.04 | High Extent |

Note: SD (Standard Deviation), N (Sample Size)

In response to research question four, Table 4 showed that the respondents rated item sixteen to twenty as high extent with a mean rating ranging from 3.29 to 3.54 while the standard deviation also ranges from .609 to .698. The cluster mean indicates a mean of 3.44. With these results, the above mean score shows the extent challenges hinder the effective implementation of practical Agricultural Science in senior secondary schools in Ovia North-East LGA, Edo State is high.

Discussion of Findings

The findings of research question one revealed that senior secondary school students are knowledgeable about the importance of Agricultural Science to a high extent. This finding support that of Adeola (2024) showing that inadequate knowledge about agricultural practical experience might lead to negative attitudes that worsen disengagement and poor academic achievement.

Research question two findings indicated that senior secondary school students aware of the place of practical Agricultural Science as a tool for enhancing mastery of Agricultural science to a high extent. This finding is in line with that of Obaruyi *et al.* (2024), students' attitudes and awareness of the place of agricultural science have a significant impact on their acceptance of the subject. Therefore, evaluating their awareness can help improve the effectiveness and delivery of agricultural science education in senior secondary schools in Ovia North East Local Government Area, Edo State.

The data output of research question three showed that exposure to practical Agricultural Science influence students' interest in the subject to a high extent. This finding aligned with that of Nwankwo and Okeke (2023) students' attitudes towards practical agricultural science are influenced by a variety of factors, such as the availability of resources, the instructors' expertise, and the topic's perceived relevance to their future careers.

The findings of research questions four depicted that the extent challenges hinder the effective implementation of practical Agricultural Science in senior secondary schools in Ovia North-East LGA, Edo State is high. This finding is in agreement with that Egun (2024) there are obstacles to the introduction of practical agricultural science in senior secondary schools, such as a lack of resources for teaching, inadequate facilities, and inadequate teacher preparation.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

This chapter focuses on summary, conclusion and recommendations.

Summary

This study examined students' awareness of the place of practical Agricultural Science in mastering Agricultural science in Senior Secondary Schools in Ovia North-east LGA, Edo State. Four research questions were raised to guide the study.

This study adopted a descriptive survey research design. The population of this study was Fourteen Thousand Two Hundred and Sixty-four (14,264) Senior Secondary School students in all Twenty-four public secondary schools in Ovia North-east LGA, Edo State. The sample size of the study consisted of Three Hundred and Ninety (390) Students from SSS 1 – SSS 3 in public senior secondary schools in Ovia North-East LGA, Edo State. The sample was derived using the Taro Yamane (1967) formula. The instrument used for data collection was a self-structured questionnaire titled “Students’ Awareness of the Place of Practical Agricultural Science in Mastering Agricultural Science in Senior Secondary Schools (SAPPASMASQ)”. It was segmented into two sections: Section A and B. The instrument for data collection was validated by the research supervisor and other experts in the Department of Agricultural Education, Faculty of Vocational and Technical Education, University of Benin, Benin City. In order to determine the reliability of the instrument, the questionnaire was administered to twenty (20) respondents who are not a part of the study. The data collected from the respondents was subjected to Cronbach Alpha’s statistics and a reliability coefficient of 0.88 was obtained. The data collected was analyzed using mean (\bar{x}) and standard deviation (SD) using Statistical Packages for the Social Science (SPSS). The findings generally showed that students’ awareness of the place of

practical Agricultural Science in mastering Agricultural science in Senior Secondary Schools in Ovia North-east LGA, Edo State is significantly high. The major findings of the study were as follows:

1. Senior secondary school students are knowledgeable about the importance of Agricultural Science to a high extent.
2. Senior secondary school students aware of the place of practical Agricultural Science as a tool for enhancing mastery of Agricultural science to a high extent.
3. Exposure to practical Agricultural Science influence students' interest in the subject to a high extent.
4. The extent challenges hinder the effective implementation of practical Agricultural Science in senior secondary schools in Ovia North-East LGA, Edo State is high.

Conclusion

Based on the findings of the study, it was concluded students' awareness of the place of practical Agricultural Science in mastering Agricultural science in Senior Secondary Schools in Ovia North-east LGA, Edo State is significantly high. This means, as a result of the exposure to practicals, the students are able to link theory to practice.

Recommendations

The following recommendations were made

1. Considering the importance of Agriculture, it become highly imperative to invest in Agricultural science in order to create more knowledge to students about the importance of Agricultural Science.

2. The school management must ensure that the students are exposed to constant or regular practical experience in order to facilitate student's awareness of the place of practical Agricultural Science as a tool for enhancing mastery of Agricultural science.
3. Students must always make themselves available for practical Agricultural Science in order to stimulate students' interest in the subject.
4. Government must ensure they nip to the bud the challenges that may hinder the effective implementation of practical Agricultural Science in senior secondary schools.

Suggestions for Further Studies

This study examined students' awareness of the place of practical Agricultural Science in mastering Agricultural science in Senior Secondary Schools in Ovia North-east LGA, Edo State.

The following suggestions for further research were outlined:

1. Factors affecting students' academic performance in Agricultural science in Senior Secondary Schools in Ovia North-east LGA.
2. Availability and utilization of agricultural tools in Senior Secondary Schools in Ovia North-east LGA.
3. Influence of agricultural practical on academic performance of Senior Secondary Schools in Ovia North-east LGA.

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APPENDICES

APPENDIX A

Department of Agricultural Science Education,
Faculty of Vocational and Technical,
University of Benin,
Benin City,
Edo State
7/11/2025.

Dear Respondent,

LETTER TO RESPONDENTS

My name is Godswill Chibuikwe NSOFOR, from the above-named institution. I am currently carrying out a research on “Students’ Awareness of the Place of Practical Agricultural Science in Mastering Agricultural Science in Senior Secondary Schools (SAPPASMASQ)” I therefore solicit for your objective responses to the questions in this paper at this would give soundness and validity to this research work. This questionnaire is purely for academic research purpose. Please read the questions carefully and give responses each of the items as best as you can. Your responses will be treated with strict confidentiality.

Thanks for your anticipated co-operation.

Yours faithfully,

Godswill Chibuikwe NSOFOR

EDU2203656

(Research Student)

APPENDIX B

QUESTIONNAIRE ON SENIOR SECONDARY SCHOOL STUDENTS' AWARENESS OF THE PLACE OF PRACTICAL AGRICULTURAL SCIENCE IN SUBJECT MATTER MASTERY OF AGRICULTURAL SCIENCE

Introduction to the Respondent:

Dear Respondent,

This questionnaire is designed to gather data for an undergraduate research project in Agricultural Education. Your responses will be treated with strict confidentiality and used solely for academic purposes.

Please tick (✓) the option that best reflects your opinion for each item. Your participation is highly appreciated.

Please indicate your level of agreement with each statement by selecting one of the following options: Very High Extent (VHE), High Extent (HE), Low Extent (LE) and Very Low Extent (VLE)

SECTION A: Demographic Information

(Please tick ✓ the option that applies to you)

Name of School: _____

Gender: Male Female

Do you offer Agricultural Science as a subject? Yes No

SECTION B:

| RQ 1 | Students' Knowledge of the Importance of Agriculture | | | | |
|-------------|--|------------|-----------|-----------|------------|
| | ITEMS | VHE | HE | LE | VLE |
| 1. | Agriculture is important for food production. | | | | |
| 2. | Agriculture provides raw materials for industries. | | | | |
| 3. | Agriculture creates employment opportunities. | | | | |
| 4. | Agriculture contributes to national economic development. | | | | |
| 5. | Agriculture plays an important role in reducing hunger and poverty. | | | | |
| RQ 2 | Students' Awareness of the role of Practical Agriculture in Mastery of Agricultural Science | | | | |

| | ITEMS | VHE | HE | LE | VLE |
|-------------|--|-----|----|----|-----|
| 6. | Practical agriculture helps me understand classroom theories better. | | | | |
| 7. | Working on a school farm increases my ability to remember Agricultural Science concepts. | | | | |
| 8. | Using farm tools during practicals improves my understanding of their functions. | | | | |
| 9. | Practical sessions make Agricultural Science more interesting to me. | | | | |
| 10. | My performance in Agricultural Science improves when I participate in practicals. | | | | |
| RQ 3 | Influence of Practical Agricultural Science on Student's Interest in the Subject | | | | |
| | ITEMS | VHE | HE | LE | VLE |
| 11. | Regular exposure to farm activities increases my interest in Agriculture. | | | | |
| 12. | I enjoy Agricultural Science lessons more when practicals are included. | | | | |
| 13. | Practical experiences encourage me to consider agriculture as a future career. | | | | |
| 14. | Exposure to practical agriculture motivates me to study Agricultural Science harder. | | | | |
| 15. | I look forward to Agricultural Science classes because of the practical sessions. | | | | |

| RQ 4 | Extent to which Challenges Hinder Effective Implementation of Practical Agriculture | | | | |
|-------------|--|------------|-----------|-----------|------------|
| | ITEMS | VHE | HE | LE | VLE |
| 16. | Inadequacy of functional school farms limits my practical experience. | | | | |
| 17. | Insufficient farm tools and equipment make participation in practicals difficult. | | | | |
| 18. | Inadequacy of time allocated to practicals reduces my opportunity to learn. | | | | |
| 19. | Poor maintenance of school farms reduces the quality of practical learning | | | | |
| 20. | Inadequacy of qualified teachers reduces the effectiveness of practical agriculture. | | | | |

APPENDIX C
OUTPUT OF RELIABILITY OF THE STUDY

Scale: ALL VARIABLES

Case Processing Summary

| | | N | % |
|-------|-----------------------|----|-------|
| Cases | Valid | 20 | 100.0 |
| | Excluded ^a | 0 | .0 |
| | Total | 20 | 100.0 |

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

| Cronbach's Alpha | N of Items |
|------------------|------------|
| .881 | 20 |

\

APPENDIX D
OUTPUT OF RESEARCH QUESTIONS

Descriptive Statistics

| | N | Minimum | Maximum | Mean | Std. Deviation |
|-----------------------|-----|---------|---------|------|----------------|
| Q1 | 390 | 1 | 4 | 3.37 | .715 |
| Q2 | 390 | 2 | 4 | 3.58 | .572 |
| Q3 | 390 | 2 | 4 | 3.40 | .693 |
| Q4 | 390 | 1 | 4 | 3.29 | .696 |
| Q5 | 390 | 1 | 4 | 3.31 | .897 |
| Valid N (listwise) | 390 | | | | |

Descriptive Statistics

| | N | Minimum | Maximum | Mean | Std. Deviation |
|-----------------------|---|---------|---------|--------|----------------|
| VAR00001 | 5 | 3.29 | 3.58 | 3.3900 | .11511 |
| VAR00002 | 5 | .57 | .90 | .7146 | .11664 |
| Valid N (listwise) | 5 | | | | |

Descriptive Statistics

| | N | Minimum | Maximum | Mean | Std. Deviation |
|-----------------------|-----|---------|---------|------|----------------|
| Q6 | 390 | 2 | 4 | 3.44 | .669 |
| Q7 | 390 | 2 | 4 | 3.44 | .639 |
| Q8 | 390 | 2 | 4 | 3.31 | .701 |
| Q9 | 390 | 1 | 4 | 3.21 | .750 |
| Q10 | 390 | 2 | 4 | 3.19 | .715 |
| Valid N (listwise) | 390 | | | | |

Descriptive Statistics

| | N | Minimum | Maximum | Mean | Std. Deviation |
|-----------------------|---|---------|---------|--------|----------------|
| VAR00003 | 5 | 3.19 | 3.44 | 3.3180 | .12029 |
| VAR00004 | 5 | .64 | .75 | .6948 | .04264 |
| Valid N (listwise) | 5 | | | | |

Descriptive Statistics

| | N | Minimum | Maximum | Mean | Std. Deviation |
|-----------------------|-----|---------|---------|------|----------------|
| Q11 | 390 | 2 | 4 | 3.37 | .627 |
| Q12 | 390 | 2 | 4 | 3.21 | .667 |
| Q13 | 390 | 1 | 4 | 3.29 | .723 |
| Q14 | 390 | 2 | 4 | 3.19 | .658 |
| Q15 | 390 | 1 | 4 | 3.37 | .793 |
| Valid N (listwise) | 390 | | | | |

Descriptive Statistics

| | N | Minimum | Maximum | Mean | Std. Deviation |
|-----------------------|---|---------|---------|--------|----------------|
| VAR00005 | 5 | 3.19 | 3.37 | 3.2860 | .08532 |
| VAR00006 | 5 | .63 | .79 | .6936 | .06549 |
| Valid N (listwise) | 5 | | | | |

Descriptive Statistics

| | N | Minimum | Maximum | Mean | Std. Deviation |
|-----------------------|-----|---------|---------|------|----------------|
| Q16 | 390 | 1 | 4 | 3.44 | .698 |
| Q17 | 390 | 2 | 4 | 3.54 | .609 |
| Q18 | 390 | 2 | 4 | 3.48 | .641 |
| Q19 | 390 | 2 | 4 | 3.29 | .637 |
| Q20 | 390 | 2 | 4 | 3.46 | .609 |
| Valid N (listwise) | 390 | | | | |

Descriptive Statistics

| | N | Minimum | Maximum | Mean | Std. Deviation |
|-----------------------|---|---------|---------|--------|----------------|
| VAR00007 | 5 | 3.29 | 3.54 | 3.4420 | .09284 |
| VAR00008 | 5 | .61 | .70 | .6388 | .03636 |
| Valid N (listwise) | 5 | | | | |

QUESTIONNAIRE FOR STUDENTS

Research Title:

Senior Secondary School Students' Awareness of the Place of Practical Agricultural Science in Subject Matter Mastery of Agricultural Science

Introduction to the Respondent:

Dear Respondent,

This questionnaire is designed to gather data for an undergraduate research project in Agricultural Education. Your responses will be treated with strict confidentiality and used solely for academic purposes.

Please tick (✓) the option that best reflects your opinion for each item. Your participation is highly appreciated.

Please indicate your level of agreement with each statement by selecting one of the following options: Very High Extent (VHE), High Extent (HE), Low Extent (LE) and Very Low Extent (VLE)

SECTION A: Demographic Information

(Please tick ✓ the option that applies to you)

Name of School: _____

Gender: Male [] Female []

Class Level: SS1 [] SS2 [] SS3 []

Age Range: 10-13 [] 14-16 [] 17-19 [] 20 and above []

Do you offer Agricultural Science as a subject? Yes [] No []

Section B: Students' Knowledge of the Importance of Agriculture

| S/N | ITEMS | VHE | HE | LE | VLE |
|-----|---|-----|----|----|-----|
| 1. | Agriculture is important for food production. | | | | |
| 2. | Agriculture provides raw materials for industries. | | | | |
| 3. | Agriculture creates employment opportunities. | | | | |
| 4. | Agriculture contributes to national economic development. | | | | |
| 5. | Agriculture plays an important role in reducing hunger and poverty. | | | | |

Section C: Students' Awareness for the Role of Practical Agriculture in Mastery of Agricultural Science

| S/N | ITEMS | VHE | HE | LE | VLE |
|-----|--|-----|----|----|-----|
| 6. | Practical agriculture helps me understand classroom theories better. | | | | |
| 7. | Working on a school farm increases my ability to remember Agricultural Science concepts. | | | | |
| 8. | Using farm tools during practicals improves my understanding of their functions. | | | | |
| 9. | Practical sessions make Agricultural Science more interesting to me. | | | | |
| 10. | My performance in Agricultural Science improves when I participate in practicals. | | | | |

Section D: Relationship between Exposure to Practical Agriculture and Students' Interest in Agricultural Science

Influence of practical Agric Science on students' interest in the subject

| S/N | ITEMS | VHE | HE | LE | VLE |
|-----|--|-----|----|----|-----|
| 11. | Regular exposure to farm activities increases my interest in Agriculture. | | | | |
| 12. | I enjoy Agricultural Science lessons more when practicals are included. | | | | |
| 13. | Practical experiences encourage me to consider agriculture as a future career. | | | | |
| 14. | Exposure to practical agriculture motivates me to study Agricultural Science harder. | | | | |
| 15. | I look forward to Agricultural Science classes because of the practical sessions. | | | | |

28/10/2025

Extent to which challenges hinder

Section E: ~~Challenges~~ **Hindering Effective Implementation of Practical Agricultural**

Science

| S/N | ITEM | VHE | HE | LE | VLE |
|-----|---|-----|----|----|-----|
| 16. | Lack of functional school farms limits my practical experience. | | | | |
| 17. | Insufficient farm tools and equipment make participation in practicals difficult. | | | | |
| 18. | Lack of time allocated to practicals reduces my opportunity to learn. | | | | |
| 19. | Poor maintenance of school farms reduces the quality of practical learning | | | | |
| 20. | Lack of qualified teachers reduces the effectiveness of practical agriculture. | | | | |

QUESTIONNAIRE FOR STUDENTS

Research Title:

Senior Secondary School Students' Awareness of the Place of Practical Agricultural Science in Subject Matter Mastery of Agricultural Science

Introduction to the Respondent:

Dear Respondent,

This questionnaire is designed to gather data for an undergraduate research project in Agricultural Education. Your responses will be treated with strict confidentiality and used solely for academic purposes.

Please tick (✓) the option that best reflects your opinion for each item. Your participation is highly appreciated.

Please indicate your level of agreement with each statement by selecting one of the following options: Very High Extent (VHE), High Extent (HE), Low Extent (LE) and Very Low Extent (VLE)

SECTION A: Demographic Information

(Please tick ✓ the option that applies to you)

Name of School: _____

Gender: Male Female

Class Level: SS1 SS2 SS3

Age Range: 10-13 14-16 17-19 20 and above

Do you offer Agricultural Science as a subject? Yes No

Section B: Students' Knowledge ^{of the} ~~Of~~ ^o The Importance ~~Of~~ ^o Agriculture

| S/N. | ITEMS | VHE | HE | LE | VLE |
|------|---|-----|----|----|-----|
| 1. | Agriculture is important for food production. | | | | |
| 2. | Agriculture provides raw materials for industries. | | | | |
| 3. | Agriculture creates employment opportunities. | | | | |
| 4. | Agriculture contributes to national economic development. | | | | |
| 5. | Agriculture plays an important role in reducing hunger and poverty. | | | | |

Section C: Students' Awareness ^o Of The ^o Role ^o Of Practical Agriculture ^o In Mastery ^o Of Agricultural Science

| S/N. | ITEMS | VHE | HE | LE | VLE |
|------|--|-----|----|----|-----|
| 6. | Practical agriculture helps me understand classroom theories better. | | | | |
| 7. | Working on a school farm increases my ability to remember Agricultural Science concepts. | | | | |
| 8. | Using farm tools during practicals improves my understanding of their functions. | | | | |
| 9. | Practical sessions make Agricultural Science more interesting to me. | | | | |
| 10. | My performance in Agricultural Science improves when I participate in practicals. | | | | |

Section D: Relationship ^b Between Exposure ^{to} To Practical Agriculture ^a And Students' Interest In Agricultural Science

| S/N. | ITEMS | VHE | HE | LE | VLE |
|------|--|-----|----|----|-----|
| 11. | Regular exposure to farm activities increases my interest in Agriculture. | | | | |
| 12. | I enjoy Agricultural Science lessons more when practicals are included. | | | | |
| 13. | Practical experiences encourage me to consider agriculture as a future career. | | | | |


| | | | | | |
|-----|--|--|--|--|--|
| 14. | Exposure to practical agriculture motivates me to study Agricultural Science harder. | | | | |
| 15. | I look forward to Agricultural Science classes because of the practical sessions. | | | | |

Section E: Challenges Hindering Effective Implementation *Of* Practical Agricultural Science

| S/N | ITEM | VHE | HE | LE | VLE |
|-----|---|-----|----|----|-----|
| 16. | Lack of functional school farms limits my practical experience. | | | | |
| 17. | Insufficient farm tools and equipment make participation in practicals difficult. | | | | |
| 18. | Lack of time allocated to practicals reduces my opportunity to learn. | | | | |
| 19. | Poor maintenance of school farms reduces the quality of practical learning | | | | |
| 20. | Lack of qualified teachers reduces the effectiveness of practical agriculture. | | | | |

The instrument is relatively adequate for the study in line with the Research Questions

3

Validated

 3/1/25

QUESTIONNAIRE FOR STUDENTS

Research Title:

Senior Secondary School Students' Awareness of the Place of Practical Agricultural Science in Subject Matter Mastery of Agricultural Science

Introduction to the Respondent:

Dear Respondent,

This questionnaire is designed to gather data for an undergraduate research project in Agricultural Education. Your responses will be treated with strict confidentiality and used solely for academic purposes.

Please tick (✓) the option that best reflects your opinion for each item. Your participation is highly appreciated.

Please indicate your level of agreement with each statement by selecting one of the following options: Very High Extent (VHE), High Extent (HE), Low Extent (LE) and Very Low Extent (VLE)

SECTION A: Demographic Information

(Please tick ✓ the option that applies to you)

Name of School: _____

Gender: Male Female

Class Level: SS1 SS2 SS3

Age Range: 10-13 14-16 17-19 20 and above

Do you offer Agricultural Science as a subject? Yes No

Remove these two variables since they are not hypothesized

Section B: Students' Knowledge Of The Importance Of Agriculture

| S/N RQ1 | ITEMS | VHE | HE | LE | VLE |
|-----------------------|---|-----|----|----|-----|
| 1. | Agriculture is important for food production. | | | | |
| 2. | Agriculture provides raw materials for industries. | | | | |
| 3. | Agriculture creates employment opportunities. | | | | |
| 4. | Agriculture contributes to national economic development. | | | | |
| 5. | Agriculture plays an important role in reducing hunger and poverty. | | | | |

Ensure that your research questions are captured as "what extent"

Merged all the tables together.

Section C: Students' Awareness Of The Role Of Practical Agriculture In Mastery Of Agricultural Science

| S/N | ITEMS | VHE | HE | LE | VLE |
|-----|--|-----|----|----|-----|
| 6. | Practical agriculture helps me understand classroom theories better. | | | | |
| 7. | Working on a school farm increases my ability to remember Agricultural Science concepts. | | | | |
| 8. | Using farm tools during practicals improves my understanding of their functions. | | | | |
| 9. | Practical sessions make Agricultural Science more interesting to me. | | | | |
| 10. | My performance in Agricultural Science improves when I participate in practicals. | | | | |

Section D: Relationship Between Exposure To Practical Agriculture And Students' Interest In Agricultural Science

| S/N | ITEMS | VHE | HE | LE | VLE |
|-----|--|-----|----|----|-----|
| 11. | Regular exposure to farm activities increases my interest in Agriculture. | | | | |
| 12. | I enjoy Agricultural Science lessons more when practicals are included. | | | | |
| 13. | Practical experiences encourage me to consider agriculture as a future career. | | | | |

| | | | | | |
|-----|--|--|--|--|--|
| 14. | Exposure to practical agriculture motivates me to study Agricultural Science harder. | | | | |
| 15. | I look forward to Agricultural Science classes because of the practical sessions. | | | | |

Section E: Challenges Hindering Effective Implementation Of Practical Agricultural Science

| SN | ITEM | VHE | HE | LE | VLE |
|-----|--|-----|----|----|-----|
| 16. | Lack of functional school farms limits my practical experience. <i>Inadequate not lack</i> | | | | |
| 17. | Insufficient farm tools and equipment make participation in practicals difficult. | | | | |
| 18. | Lack of time allocated to practicals reduces my opportunity to learn. <i>Inadequate</i> | | | | |
| 19. | Poor maintenance of school farms reduces the quality of practical learning | | | | |
| 20. | Lack of qualified teachers reduces the effectiveness of practical agriculture. <i>Inadequate</i> | | | | |

The items adequately measure the purposes and research questions that guided the study: Hence, the instrument is relatively valid

3 DR. S. A. ADEOYE

[Signature] 03/10/25