

REPORT OF THE INTERNATIONAL VETERINARY VACCINOLOGY NETWORK / AFRICAN SCHOOLS OUTREACH PROGRAMME IN NIGERIA HELD IN OCTOBER 2023

1.0 Introduction

The International Veterinary Vaccinology Network (IVVN) stands as a beacon of global collaboration, uniting scientists and industry partners to combat high-consequence livestock diseases in low- and middle-income countries (LMICs). One of the key initiatives of the IVVN is the promotion of gender equality in veterinary vaccinology, striving to create a more inclusive research environment. This report delves into the impactful workshop held at the University of Ibadan, Nigeria, on October 14, 2023, and the subsequent African Schools Outreach Programme (ASOP) aimed at fostering interest in young scientists in three secondary schools in Ibadan between 17-19 October 2023.

2.0 Workshop Overview

The workshop, centred around combating rabies, showcased techniques employed by scientists in Nigerian laboratories. Hosted at the Department of Zoology, University of Ibadan, the event brought together facilitators and participants eager to contribute to the aims of IVVN/ASOP in fostering gender equality in science and research. A significant aspect of the workshop was the discussion on the independent establishment of the African Schools Outreach Programme (ASOP). ASOP's mission is to extend scientific knowledge and inspire young minds who will recognize the importance of engaging with future scientists at an early stage and the establishment of commendable strides toward the achievement of this goal. The facilitators for the school outreach underwent extensive training during the workshop, focusing on effective interaction with young scientists and the utilization of mobile laboratories provided by the organization.

3.0 School Outreach Implementation

From October 17th to 19th, 2023, the ASOP unfolded across three different schools in Ibadan, Oyo State, Nigeria. The Apostolic Church Model College Sango, St. Gabriel Commercial Secondary School Sabo-Mokola, and Anglican Commercial Grammar School, Agodi-Gate played host to this transformative initiative. The participant turnout was impressive, with 120, 121, and 131 students

from the three schools, respectively. The core of success recorded during this particular schools outreach lies in its ability to engage students who are at the cusp of choosing their academic paths. The outreach targeted junior class students, providing them with insights into the world of veterinary vaccinology. Although there was a fair participation of males, the initiative played a crucial role in encouraging more females to explore science, a domain where gender disparity often exists.

The workshops conducted during the school outreach were designed to be interactive, ensuring that students gained practical knowledge. Facilitators, armed with the insights from the IVVN workshop, demonstrated the usage of laboratory equipment in the mobile labs. Hands-on experiences with these tools not only enriched the students' understanding but also kindled a passion for scientific exploration. The ripple effect of the ASOP extended beyond the immediate participants. By reaching out to schools in Oyo State, the program contributed to the local community's awareness of veterinary vaccinology. This not only benefits the students directly involved but also creates a foundation for future community support and understanding of the importance of combating animal diseases.

4.0 Fruit Planting Initiatives

In addition to the enlightening workshops and outreach activities, a notable initiative was undertaken to address a concerning observation - the low consumption of fruits among Nigerians. Recognizing the importance of a balanced and nutritious diet in promoting overall health, a concerted effort was made to instil the habit of fruit consumption among the students and staff of each of the three schools during the ASOP. The fruit planting sessions were organized as an integral part of the ASOP, with the aim of not only promoting healthy eating habits but also instilling a sense of responsibility and environmental consciousness among the students.

Beyond the immediate benefits of increased fruit availability, the planting sessions provided valuable educational opportunities. Students gained insights into the life cycles of plants, the importance of soil health, and the role of trees in maintaining a balanced ecosystem. These sessions aligned with broader educational goals, integrating scientific principles with practical and real-world applications. The fruit planting initiatives, woven into the fabric of the ASOP, are poised to

have lasting effects on the participating schools and their communities. As the fruit trees mature, they will not only serve as a readily available source of nutritious snacks but also as a symbol of the positive impact that collective efforts can have on health, education, and the environment.

5.0 Responses from questionnaires

5.1 Students' responses

The data collected from a group of 372 participants, comprising varying age groups and genders, provides insightful feedback on their experience with the workshop is presented in Table 1. Age distribution among the participants varied, with the majority falling between 13 to 14 years old (approximately 49% combined). In terms of gender, the workshop drew a predominantly female audience, with 81.18% of participants identifying as female compared to 18.82% identifying as male. This gender distribution reflects underlying focus and interest of the workshop in attracting more females in science.

Participants were asked to express their feelings about their workshop experience through selecting words that best described it. The most commonly selected descriptors included "Interesting" (86.29%), "Inspiring" (68.82%), and "Rewarding" (61.29%). These positive sentiments indicate that the workshop content resonated well with the majority of participants, leaving them feeling engaged and enriched. Interestingly, despite the overwhelmingly positive responses, a small percentage of participants found the workshop to be "Boring" (2.96%) or "Challenging" (19.09%). This suggests that while the workshop appealed to most, there were still areas that may require improvement or adjustment to better cater to the needs and preferences of all participants. When asked about their overall enjoyment of the workshop, an overwhelming majority rated it as "Very good" (95.16%), indicating high levels of satisfaction and fulfilment with the experience and suggesting that the workshop was generally well-received and positively impactful while only a negligible percentage rated it as "Poor" (0.27%).

Table 1: Socio-demographic characteristics and feelings of participants in the school outreach

Variable		Frequency (n = 372)	Percentage (%)
Age(years)	8	1	0.27
	9	9	2.42
	10	41	11.02
	11	58	15.59
	12	78	20.97
	13	109	29.30
	14	44	11.83
	15	20	5.38
	16	12	3.23
Gender	Male	70	18.82
	Female	302	81.18
Words that best describe your feelings about your experience	Fun	132	35.48
	Boring	11	2.96
	Informative	152	40.86
	Inspiring	256	68.82
	Surprising	78	20.97
	Uninteresting	1	0.27
	Rewarding	228	61.29
	Interesting	321	86.29
	Confusing	2	0.54
	Enjoyable	157	42.20
	Challenging	71	19.09
	Thought-provoking	89	23.92
	Frustrating	0	0.00
	Dull	0	0.00
	Exciting	333	89.52
How much did you enjoy the workshop?	Very good	354	95.16
	Good	7	1.88
	Satisfactory	10	2.69
	poor	1	0.27
	Very poor	0	0.00

5.1 Teachers' Responses

Table 2 presents the ratings for various aspects of the workshop as teachers perceive. Overall, the workshop received positive feedback, with the majority of responding teachers satisfied with the content (79.31%), structure and pace (75.86%), equipment (96.55%), knowledge of staff (58.62%), approachability of staff (62.07%), and organization of scientists (89.66%) and rated it as "Very Good".

Table 2: Teachers' responses on how they rated aspects of the workshop

How would you rate the following aspects of the workshop?					
	Very Good (%)	Good (%)	Satisfactory (%)	Poor (%)	Very poor (%)
Content	79.31	17.24	3.45	0.00	0.00
Structure and pace	13.79	75.86	10.34	0.00	0.00
Equipment	96.55	3.45	0.00	0.00	0.00
Knowledge of Staff	58.62	41.38	0.00	0.00	0.00
Approachability of staff	34.48	62.07	3.45	0.00	0.00
Organisation of staff	89.66	10.34	0.00	0.00	0.00
Overall rating	86.21	13.79	0.00	0.00	0.00

The responses of the participating teachers on how the workshop successfully achieved the objectives of the workshop is presented in Table 3. The workshop was successful in providing participants with hands-on practical lab experience and effectively improving participants' skills and confidence in experimentation and practical science, with 96.55% and 96.55% of respondents considering it "Very successful." Respectively. Additionally, the workshop successfully increased or reinforced understanding of vaccines and jobs in animal science, with 96.55% and 82.76% of respondents considering it "Very successful" respectively. However, when it comes to providing an opportunity for pupils to meet and speak with scientists, as well as inspiring pupils to think about science as a career option or to consider studying it further, the workshop was less successful. Only 17.86% of respondents considered the opportunity for pupils to meet and speak with scientists "Very successful," and only 17.24% felt that the workshop successfully inspired pupils to consider science as a career option. Similarly, providing an opportunity for participants and their

colleagues to meet and speak with scientists was rated less successful, with 31.03% considering it "Very successful."

Table 3: Teachers responses on how successful the objectives of the workshop was achieved

How successfully did the workshop achieve the following?	Very successful (%)	Quite successful (%)	Not very successful (%)	Not at all successful (%)
Providing an opportunity for hands-on practical lab experience	96.55	3.45	0.00	0.00
Providing an opportunity for your pupils to meet and speak with scientists	17.86	82.14	0.00	0.00
Providing an opportunity for you and your colleagues to meet and speak with a scientist	31.03	68.97	0.00	0.00
Improving your pupils skills and confidence in experimentation and practical science	96.55	3.45	0.00	0.00
Increasing or reinforcing understanding of vaccines	96.55	3.45	0.00	0.00
Increasing or reinforcing understanding of jobs in animal science	82.76	17.24	0.00	0.00
Inspiring your pupils to think about science as a career option or to consider studying it further	17.24	79.31	3.45	0.00

The workshop appears to have had a significant impact on the pupils who participated, particularly in terms of increasing their interest in science and making them more aware of careers in the field. A majority of teachers, 68.97%, strongly agreed that the workshop increased their pupils' interest in science, indicating that the activities and content of the workshop were engaging and compelling for the students. Moreover, 93.10% strongly agreed that the workshop made their pupils more aware of careers in science while 86.21% strongly agreed that the workshop seems to have had a positive effect on students' motivation to pursue science further in school Figure 1.

What impact do you feel the workshop had on your pupils?

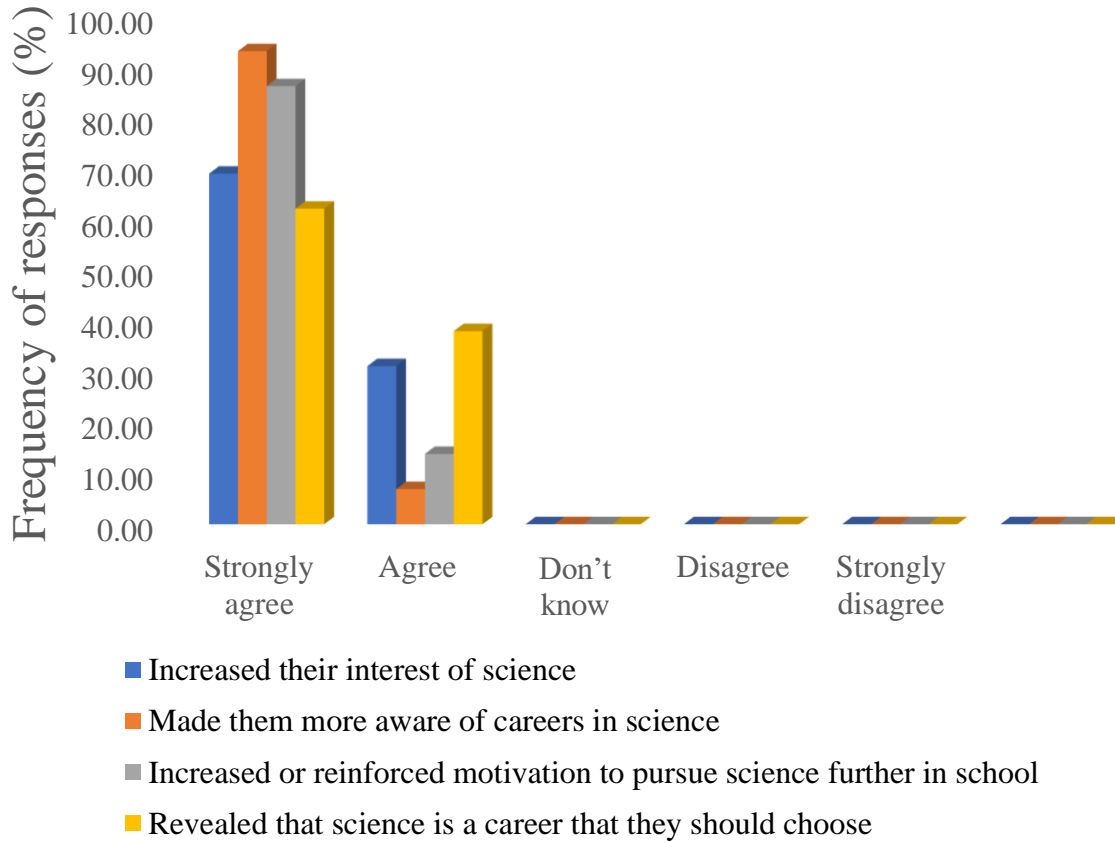


Figure 1: Bar chart showing the teachers responses on the impact of the workshop on the pupils

September through November and August are the optimal months for the school to consider scheduling the workshop, as they are more likely to accommodate the availability and preferences of participants (Figure 2). However, further considerations such as school calendars, holidays, and other events were identified as factors to be considered when finalizing the workshop schedule.

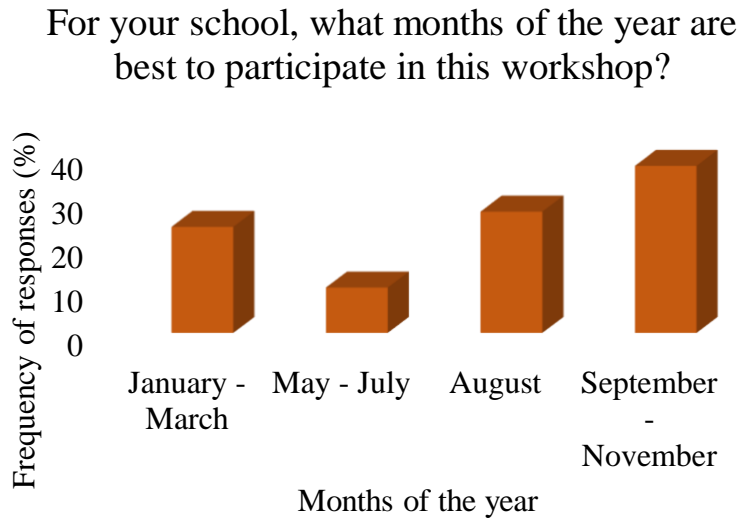


Figure 2: Bar chart showing suitable month(s) for the teachers to participate in the workshop

6.0 Conclusion

The collaborative efforts of the IVVN and ASOP have left an indelible mark on the educational landscape in Nigeria. The workshop at the University of Ibadan and the subsequent school outreach exemplify a holistic approach to scientific engagement, fostering a spirit of inclusivity and equality. As we look toward the future, initiatives like ASOP serve as beacons of hope, inspiring the next generation of scientists to tackle global challenges in veterinary vaccinology. The dedication to gender equality ensures that these opportunities are accessible to all, laying the groundwork for a diverse and vibrant scientific community in Nigeria and beyond. By instilling the habit of fruit consumption and providing students with the opportunity to actively contribute to the greening of their school environments, the initiative transcends immediate health benefits. It lays the groundwork for a sustainable, community-driven approach to nutrition and environmental stewardship, aligning with the broader goals of the IVVN and ASOP in fostering a healthier and more resilient society. The fruit of these collective efforts will not only be enjoyed by the current generation of students but will also leave a lasting legacy for future generations to come.



Figure 3: Representative of pictures taken during the schools outreach programme at The Apostolic Church Model College Sango, Ibadan.



Figure 2: Representative of pictures taken during the schools outreach programme at St. Gabriel Commercial Secondary School Sabo-Mokola, Ibadan



Figure 3: Representative of pictures taken during the schools outreach programme at Anglican Commercial Grammar School, Agodi-Gate, Ibadan