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BIOLOGY TEACHERS' PERCEPTION ON THE USE OF RESOURCE PERSONS IN TEACHING AND LEARNING

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Abstract
This study investigates the perceptions of secondary school biology teachers on the role of resource persons in enhancing teaching and learning outcomes. The research adopted a descriptive survey design involving 50 biology teachers from 25 schools in Education District IV. Data was gathered through questionnaires and analyzed using descriptive and inferential statistics, including percentages, mean deviation, and Pearson Product Moment Correlation Coefficient. The results show that resource persons play a significant role in enhancing biology education by offering expert knowledge and real-world applications. Teachers acknowledged the positive impact of resource persons on student motivation, interest, and academic performance. However, statistical analysis showed no significant relationships between teachers' age ($r = 0.186$, $p = 0.196$), academic qualifications ($r = -0.028$, $p = 0.848$), or years of experience ($r = -0.200$, $p = 0.165$) and their perceptions. The study recommends that educational authorities prioritize the training and integration of resource personnel to strengthen biology education.

Introduction

The teaching of biology at the secondary school level demands more than the transmission of theoretical knowledge. As a subject grounded in observation, experimentation, and real-world application, biology requires instructional approaches that can bridge the gap between abstract concepts and practical experiences. Despite efforts to improve biology education through curriculum reforms and laboratory-based learning, many students continue to struggle with

understanding complex topics such as ecology, genetics, and cell biology (Odunuga & Nnadozie, 2015). This struggle is often attributed to the lack of exposure to real-world applications and the limitations of traditional teacher-centered methods.

One potential solution is the use of resource persons who represents an external expert who bring practical knowledge, field experience, and specialized insights into the classroom. Resource persons can serve as guest lecturers, demonstrators, or mentors, offering students firsthand exposure to the application of biological principles in areas such as health care, agriculture, biotechnology, and environmental science (Bernard, 2015; Ebomoyi, 2010). Their involvement has been linked to increased student interest, improved academic performance, and better understanding of abstract content (Knapp, 2015; Aiyelagbe, 2016). In Nigeria, the integration of resource persons in secondary education is underutilized and under-researched. While some studies have documented the positive impact of field trips and external demonstrations, there is limited empirical evidence on how biology teachers perceive the value of resource persons and what factors influence these perceptions. Given that teachers play a central role in facilitating and approving the use of external experts, understanding their viewpoints is essential for developing effective policies and practices.

By integrating students into their environment through firsthand experiences, they gain a deeper understanding of the system that exists within organisms and how these system impacts or are impacted by their environment. This approach would also prevent the fragmentation of educational content into unrelated or loosely connected fields, which can expand a child's learning expectations without offering a common foundation for practical application. It is imperative that educators seek to bridge the gap between theoretical knowledge and the practical application of this knowledge in real life situation through the utilization of resources person in education which would greatly assist in reducing of the complexity in teaching of Biology (Adulamid, 2012). Therefore, this study seeks to explore the perceptions of biology teachers regarding the use of resources in teaching and learning. It aims to assess the extent to which resource persons are perceived to enhance instructional quality, and whether these perceptions vary by teachers' academic qualifications, professional experience, or age.

Statement of the Problem

The challenge of enhancing student learning outcomes in biology has long been a concern for educators, particularly biology teachers, as there is a growing need for practical, real-world applications of knowledge in fields like Computational Biology, Ecology, Evolution, and Genetics. These areas are no longer confined to textbooks, classrooms, or school laboratories. Despite teachers' efforts, many students struggle to grasp complex biological concepts, often due to a lack of firsthand experiences and contextual understanding, which professionals involved in research and industry could provide. As a result, many advocates for educational reform are calling for the increased involvement of resource persons to support school biology teachers, making biology more engaging and relevant to students' everyday environmental experiences. Among the strongest supporters of involving resource persons in teaching biology are career educators and social scientists who view education as essential preparation for one's roles as a citizen, family member, and employee. In light of this, the current research aims to explore biology teachers' perceptions of utilizing resource persons in the teaching and learning of biology.

Research Questions

The study seeks to answer the following primary research questions:

1. Does incorporating resource persons in biology instruction enhance student learning in the subject?
2. Is there a relationship between academic qualification possessed by teachers' and their perception on the use of resource person?
3. Is there a relationship between teachers' years of experience and their perception on use of resource persons to improve students' performance in Biology?
4. Is there a relationship between teachers' age and their perception on use of resource persons?

Research Hypothesis

Ho_1: There is no significant relationship between academic qualifications possessed by teachers' and their perception on the use of resource person.

Ho_2: There is no significant relationship between teachers' years of experience and their perception on use of resource people to improve students' performance in Biology.

Ho_3: There is no significant relationship between teachers' age and their perception on use of resource persons.

Literature Review

Resource persons are professionals with expertise in specific fields who provide practical insights into classroom subjects. Abifarin (2010) defines them as experts applying real-world knowledge to teaching. Bernard (2015) extends this idea, stating that community resource persons, such as volunteers, offer their skills and knowledge to help students in both academic and life skills development. The literature emphasizes two primary ways resource persons can be utilized: by bringing them into the classroom or by organizing field trips to their workplaces (Knapp, 2015). Both methods provide students with experiences that go beyond the textbook, addressing challenges in teaching complex scientific concepts.

Many students struggle with biological concepts due to a lack of contextual understanding and first-hand experiences. This challenge is especially relevant in complex fields like computational biology, ecology, and genetics. The document references advocates of educational reform who argue that resource persons can bridge the gap between theory and practice, making biology more engaging and relevant to students' everyday lives (Odunuga & Nnadozie, 2015).

Biology, being a subject grounded in real-world applications, greatly benefits from resource persons. The integration of practical examples into teaching helps students better understand complex topics. The works of Adulamid (2012) and Aiyelagbe (2016) support the argument that using resource persons allows students to gain a deeper understanding of biology by connecting theoretical knowledge to practical applications. The use of professionals was also noted to aid the process of teaching and learning of Biology in Secondary Schools to achieve set goals and aims of the certain lessons is crucial to the development of students for the society and not just to improve their academic performance as noted by the works of (Abifarin, 2010). The use of a resource on teaching Biology is in line with the findings of (Ebomoyi, 2010) who work positively outlined the benefits of using a resource person to teach certain core areas of the science curriculum in Nigeria. Several studies referenced in the review suggest that resource persons play a critical role in improving student learning outcomes. Ebomoyi (2010) highlights the benefits of having

professionals teach specific areas of science curricula in Nigeria, while Knapp (2015) demonstrates how field trips and expert interactions enhance students' understanding and interest in biology. The study also draws from Odunuga and Nnadozie (2015), who found that community resource persons significantly improved students' comprehension of complex biology topics during field trips.

The literature emphasizes the value of resource persons in education, particularly for practical subjects like biology. The integration of experts into teaching enhances students' understanding by linking theory to real-world examples. Despite some challenges, such as aligning expert contributions with curricular goals, the consensus is that resource persons offer valuable support in achieving better educational outcomes in biology. While In summary, the literature review establishes a strong foundation for the use of resource persons in biology education, referencing various studies that support the inclusion of external experts to assist teachers and improve student engagement and performance

While international literature supports the pedagogical value of resource persons, studies focusing on sub-Saharan Africa, and Nigeria in particular, remain limited. Few studies systematically explore how teachers perceive resource persons or what demographic or institutional factors influence these perceptions. Addressing this gap is essential for developing evidence-based strategies to promote the integration of community and professional expertise into science classrooms

Methodology

Research Design

The research design utilized in this study is Descriptive survey design, focusing on teachers' subjective perceptions of how a resource person can be effectively integrated into the classroom. This design was appropriate as it allowed for the systematic collection and analysis of data from a defined population without manipulating variables. The approach also facilitated the exploration of potential relationships between teacher demographics and their attitudes toward resource person integration.(Robb, 2003; Pelin et al., 2015).

Population and sampling techniques

The target population comprised all biology teachers in public and private senior secondary schools within Education District IV of Lagos State, Nigeria. A total of 50 biology teachers were selected using simple random sampling from 25 schools (2 teachers per school). The schools were drawn from two Local Government Areas: Yaba and Shomolu.

Inclusion criteria required that participants had at least one year of teaching experience and were actively involved in biology instruction at the time of data collection.

Instrument for Data Collection

A structured questionnaire was used for data collection. This questionnaire consists of questions on a Likert scale that allow the following scoring options: Strongly disagreed (SD) = 1, Disagreed (D) = 2, Agreed (A) = 3, and strongly agreed (SA =4). Content validity was ensured through expert review by three senior science educators and curriculum specialists while the study instrument was further subjected to a reliability test using a pilot test conducted with 10 biology teachers from schools outside the study area. Using the internal consistency method, Cronbach's alpha was

calculated and yielded a reliability coefficient of 0.83, indicating that the instrument was acceptably reliable for the intended constructs.

Method of Data Analysis

The completed sets of questionnaires were collected and analyzed using descriptive and inferential statistics such as percentages, mean, deviation and Pearson Product Moment Correlation Coefficient.

Results and Discussion

In this section, the data collected were analysed to provide answers to the research questions raised in chapter one.

Table 1: The role of resource person to stimulate the interest of students in Biology

ITEM	SD(%)	D(%)	A(%)	SA(%)	Mean	St. Dev.
A resource person will help in motivating the students' knowledge in Biology	0(0.0)	0(0.0)	28(56.0)	22(14.0)	3.44	0.501
A resource person help to stimulate students interest in Biology by giving an expert detail in teaching Biology	0(0.0)	0(0.0)	28(56.0)	22(14.0)	3.44	0.501
A resource person will shape the life and attitude of students towards appreciating the subject Biology	1(2.0)	1(2.0)	25(50.0)	23(46.0)	3.40	0.639
A resource person will combine lesson topic with local development much easier than a classroom teacher does	1(2.0)	16(32.0)	13(26.0)	20(40.0)	3.04	0.903
A resource person will increase students' interest rate towards the learning of Biology more than their school teacher	2(4.0)	19(38.0)	12(24.0)	17(34.0)	2.88	0.940
A student will benefit more from a laboratory class handled by a community resource person compare to that handled by their school Biology teacher	2(4.0)	23(46.0)	15(30.0)	10(20.0)	2.66	0.848

Table 1 above showed the improvement of learning of Biology through the use of resource persons.More than half of the respondents accepted all the six items as true. Those that agreed and strongly agreed with each of the sixitems are above 50%. The mean ratings of each of the sixitems are each above the 2.50 benchmark for the acceptance of a statement in a four-likert scale. This is

a confirmation of the result found from the frequency and percentages analyses. Therefore, a resource person can significantly enhance students' motivation and interest in biology by providing expert insights, connecting lessons to local development, and improving the quality of laboratory experiences which would improve the learning of biology.

Table 2: The Use of Resource Person and its role in Academic Achievement

ITEM	SD (%)	D(%)	A(%)	SA(%)	Mean	St. Dev.
Students will perform better in theoretical application when a resource person is invited to teach Biology	2(4.0)	9(18.0)	28(56.0)	11(22.0)	2.96	0.755
Students will have a better idea of real life application of Biology when a resource person is invited to teach Biology in the classroom	0(0.0)	2(4.0)	35(70.0)	13(26.0)	3.22	0.507
The use of a resource person to teach Biology in the classroom will improve students' knowledge of Biology practical	0(0.0)	2(4.0)	33(66.0)	15(30.0)	3.26	0.527
The use of resource person to teach Biology will improve students' academic performance in Biology	0(0.0)	5(10.0)	32(64.0)	13(26.0)	3.16	0.584
The use of resource person will positively influence Students' overall performance in Biology	0(0.0)	1(2.0)	32(64.0)	17(34.0)	3.32	0.513

Table 2 above showed the improvement of achievement of Biology through the use of resource persons. More than half of the respondents accepted all the five items as true. Those that agreed and strongly agreed
with each of the five items are above 50%. The mean ratings of each of the five items are each above the 2.50 benchmark for the acceptance of a statement in a four likert scale. The result indicates that the use of resource person alongside Biology teacher would improve academic achievement of students.

Table 3: Role of resource person in the achievement of both teaching and learning objectives

ITEM	SD(%)	D(%)	A(%)	SA(%)	Mean	St. Dev.
The use of resources person to teach Biology in the classroom will help students to acquire adequate laboratory skills	6(12.0)	6(12.0)	26(52.0)	12(24.0)	2.88	0.918
The use of resource person to teach Biology in the classroom will help students to acquire adequate field skills	4(8.0)	7(14.0)	28(56.0)	11(22.0)	2.92	0.829
The use of resources person to teach Biology in the classroom will offer more relevant knowledge of Biology	5(10.0)	3(6.0)	24(48.0)	18(36.0)	3.10	0.909
Inviting a resources person to the classroom to teach Biology will help students to apply scientific knowledge to everyday life matters	7(14.0)	9(18.0)	24(48.0)	10(20.0)	2.74	0.944
Inviting a resources person to the classroom to teach Biology will help students to build a good career path in Biology	6(12.0)	2(4.0)	30(60.0)	12(24.0)	2.96	0.880

Table 3 above showed the achievement of teaching and learning objectives of Biology through the use of resource persons. More than half of the respondents accepted all the five items as true. Those that agreed and strongly agreed with each of the five items are above50%. The mean ratings of each of the five items are each above the 2.50 benchmark for the acceptance of a statement in a four likert scale.

Testing of Research Hypothesis

Hypothesis One: There is no significant relationship between academic qualification possessed by teachers' and their perception on the use of resource person.

Table 4: Relationship between academic qualification and perception on use of resource persons to improve learning of Biology.

Variable	N	Mean	SD	r calculated	p-value	Remark
Academic Qualification	50	2.52	0.762	-0.028	0.848	NS
perception on use of resource persons to improve learning of Biology	50	6.88	0.849			

NS – Not Significant

Pearson Product Moment Correlation Coefficient was calculated for the relationship between academic qualification and perception on use of resource persons to improve learning of Biology. A very weak neutral correlation which was not significant was found (r = -0.028; p=0.848). Therefore, there is no significant relationship between academic qualification and perception on use of resource persons to improve learning of Biology.

Hypothesis Two: There is no significant relationship between teachers' years of experience and their perception on use of resource persons to improve students' performance in Biology.

Table 5: The relationship between Biology teachers' experience and perception on use of resource persons to improve students' performance in Biology**.**

Variable	N	Mean	SD	r calculated	p-value	Remark
Teachers' experience	50	4.00	1.355	-0.200	0.165	NS
Perception on use of resource persons to improve students' performance in Biology	50	9.44	1.358			

NS – Not Significant

A Pearson Product Moment Correlation Coefficient was calculated for the relationship between teachers' experience and perception on use of resource persons to improve students' performance in Biology. A very weak positive correlation which was not significant was found (r = - 0.200; p=0.165). Therefore, there is no significant relationship between teachers' experience and perception on use of resource persons to improve students' performance in Biology.

Hypothesis Three: There is no significant relationship between teachers' age and their perception on use of resource persons.

Table 6: The relationship between Biology teachers' age and Biology teachers' perception on the use of resource persons to learning objectives in Biology.

Variable	N	Mean	SD	r calculated	p-value	Remark
Age	50	5.44	1.514	0.186	0.196	NS
Perception on use of resource persons to learn objectives in Biology	50	5.80	0.552			

N**S –Significant**

A Pearson Product Moment Correlation Coefficient was calculated for the relationship between teachers' age and perception on use of resource persons to learning objectives in Biology. A very weak positive correlation which was not significant was found (r = 0.186; p=0.196). This suggests that regardless of academic degree, teachers equally recognize the value of incorporating external experts in biology instruction.

Discussion of findings

The study examined Biology teachers' perceptions regarding the use of resource persons in the teaching and learning processes within secondary schools. The results indicate that teachers view the involvement of resource persons positively, with most agreeing that these experts can significantly enhance students' motivation, interest, and academic performance in Biology. Teachers reported that resource persons help bridge the gap between theoretical knowledge and practical application by providing expert insights and involving students in real-life applications of biological concepts.

Although the overall feedback was positive, the study found no significant correlation between teachers' academic qualifications, experience, or age and their perceptions of the usefulness of resource persons. This implies that the benefits of resource persons are widely recognized across various teacher demographics. These findings align with previous research, such as Odunuga and Nnadozie (2015), which emphasized the value of resource persons in engaging students through field trips and hands-on demonstrations. Likewise, Aiyelagbe (2016) highlighted the positive impact of using community resource persons on the quality of Biology education.

The data suggest that resource persons can promote a more interactive and practical learning environment. However, the relatively weak influence of teacher demographics on their perceptions implies that other factors may affect the successful integration of resource persons into schools. These factors could include logistical challenges, administrative support, and the availability of qualified resource persons within different communities.

Conclusion

The findings of this study reveal that Biology teachers strongly support the use of resource persons to enhance the teaching and learning of Biology. The involvement of resource persons in the classroom introduces practical knowledge and real-world applications that improve students' understanding and interest in the subject. However, the study also shows that the effectiveness of resource persons is not influenced by teachers' age, qualifications, or experience.

In conclusion, the study emphasizes the importance of resource persons in Biology education, as they help bridge the gap between theory and practice. It is recommended that educational authorities take steps to train and support teachers in effectively incorporating resource persons into their teaching approaches. Further research could explore the long-term effects of resource persons on student outcomes and the challenges associated with their integration in various educational settings.

References

Abifarin, A.A. (2012). The use of resource persons in teaching and learning of instructional technology and its application. *Akoka Journal of Vocation and Science Education (AJOASE)* 1 (1),pg. 32-37.

Adulamid, A. (2014). A plan to Determine the Practicability, Efficacy and Safety of Flourinating a Communal Water Supply, Deficient in Flourine, to Control Dental Caries. Flourine in Dental Public Health, New York State Institute of Oral Pathologyp. 40.

Ayelagbe S.O (2016). Role of community resources in improving the quality of teaching and learning in Nigeria Schools.https://www.globalacademicgroup.com /journals/teacherperspective

Bernard, B. (2015). How schools convey high expectations for kids. Western Centre News, 5(3): 11-15.

Ebomoyi. E. (2010). Towards an ideal curriculum for primary health care education. *Nigerian Journal of Curriculum Studies*. 4(1) pg. 140.

Knapp, C. E. (2015). Just beyond the classroom: Community adventures for interdisciplinary learning. (ED 388485) Available from ERIC Clearinghouse on Rural Education and Small Schools.).

Maarschalk, J. (2010). Scientific literacy and informal science teaching. *Journal of Research in Science Teaching*, 25, 135-146.

Odunuga O,A, & Nnadozie G,T. (2015). Roles of community resource person in teaching band learning of Biology in Secondary Schools: *Akoka Journal of Pure and Applied Sciences (AJOPASE)*, 12(1) Edition). pg. 68-73

Penil, Y. & Soner, Y. (2015). Theoretical framework, methods and procedures for conducting phenomenalogical studies in education setting. *Turkish Online Journal of Qualitative Inquiry,* January 2015, 6(1)

Robb, S. (2003). Introduction to the method used to study perception. Science Education Partnership Award (SEPA). Supported by National Institute of Health (NIH) https://mind.ilstu.edu/curriculum/perception_intro/intro_to_methods_short.html