
DIFFICULT BIOLOGY TOPICS AS PERCEIVED BY SECONDARY SCHOOL STUDENTS IN NKANU EAST L.G.A. OF ENUGU STATE

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Abstract

This study investigated the difficult biology topics as perceived by secondary school students in Nkanu East Local Government Area of Enugu State. Descriptive survey research design was adopted in the study. Population for the study: 5 secondary schools in Nkanu East Local Government Area was used. The sample size for the study was 100 biology students. Purposive random sampling technique was adopted. A structured questionnaire designed by the researcher which was face and content validated by two experts in biology education and measurement and evaluation department in Enugu State University of Science and Technology were used to collect data for the analysis. The reliability of the instrument was determined using Cronbach Alpha and reliability coefficient of 0.824 was obtained. Arithmetic mean was used to analyze the data collected for the study. The findings revealed that genetics, evolution and the cell and its environment are the topics identified as difficult to learn in biology. Students also identified lack of adequate experiment, allocated time and attention, as factors responsible for the identified topics difficult to learn in Biology. Again, students agreed that regular practical work is one of the ways of improving their difficulties in learning the topics identified difficult to learn in biology. Based on the findings, the researcher recommends that government should employ qualified and experienced biology teachers for effective teaching and learning of biology in secondary schools.

Keywords: Biology, Difficulty, Secondary School, Teaching, Learning.

Introduction

There had been worldwide recognition of importance of science and science education in national development and this has found a central place in the curriculum of schools at all levels (Ogbonna, 2009). According to Olatoye (2014), science education is designed to guide the world towards a scientifically literate society and this is important for an understanding of science as it offers personal fulfillments and excitements. Different authors according to their own understanding have defined science. For instance Igwe (2006) defined science as a systematic study of the nature of behaviour of the material and physical universe through observation, experimentation, measurement and recording. In addition, Esu (2008) defined science as a systematic, precise objective way to study the natural

world. The major goal of science education is to develop scientifically literate individuals that are concerned with high competence for rational thoughts and actions. Science comprises the basic disciplines such as Physics, Chemistry, Mathematics and Biology. Biology is one of the science subject that senior secondary schools offer at the senior level in the Nigerian Secondary Schools, (FRN 2004).

Biology is a very important science subject and a requirement for further learning of a number of science-related professional courses like Medicine, Agriculture, Pharmacy, etc. Despite the fact that Biology is the simplest to comprehend among the science subjects, the level of academic achievement is nonetheless not much different from other science subjects among the students. However, the issue remains that in most secondary schools in Nigeria; there is high rate of failure in the subject in the senior secondary school

certificate examination. Recent statistics released by the two examination bodies; West African Examination Council (WAEC) and National Examination Council (NECO) in 2015, showed that the standard of teaching and learning in both public and private schools have continued to wane at a learning rate as the failure rate remained very high.

According to the study of Abimbola (2008) the biology topics perceived as difficult to teach included Ecology, Chromosome's cellular, Respiration, Growth and Heredity. Ariyo (2014) identified such topics as cells, mitosis and meiosis, organs, physiological processes, hormonal regulation, oxygen transport and genetic engineering as difficult to learn in secondary schools according to the students' response in the study. According to Lazarowitz and Penso (2012), the biological level of organization and the abstract level of the concepts make learning biology difficult from this perspective,

there is a clear and urgent need to improve students' academic achievement in biology in both internal and external examination. Understanding secondary school students' perceptions of biology will help education policymakers, teachers and teachers educators plan more effective teaching activities that can help students learn biology better and have more positive attitude towards it.

This has propelled the researcher to carry out this research on difficult biology topics as perceived by secondary school students in Nkanu East Local Government Area of Enugu State.

Statement of the Problems

For sometime now, various secondary school students have exhibited unsatisfactory performance in some biology topics that are perceived as difficult to learn and the reasons for their learning challenges are not known. Poor achievement of students in biology may suggest that there are some topics in the

biology curricula that students perceived as difficult in the course of teaching- learning process. Furthermore, student's opinion and contributions are not taken seriously in classroom management. Student's opinion and perception about biology can lead to the difficulties and challenges they often face in learning the topics in biology. The problem of this study put in question form is what are the topics in biology that students perceive as difficult to learn in secondary schools? What are the factors responsible to the identified topics students find difficult to learn in secondary schools? What are the ways to improving the identified topics students find difficult to learn in secondary schools?

Research Questions

The following research questions guided the study:

1. What are the topics in biology that students find difficult to learn in secondary schools in Nkanu East

Local Government Area of Enugu State?

2. What are the factors responsible to the identified topics students find difficult to learn in secondary schools in Nkanu East Local Government Area of Enugu State?

3. What are the ways to improving the identified topics students find difficult to learn in secondary schools in Nkanu East Local Government Area of Enugu State?

Methodology

Descriptive survey research design was adopted in the study. This study was carried out in secondary schools in Nkanu East Local Government Area of Enugu State. Population for the study is 258, which comprised of all the senior secondary school students in SS2 class in the 5 selected secondary school in Nkanu East Local Government Area of Enugu State. The sample size is 100 students in the 5 selected secondary schools in Nkanu East

Local Government Area. Purposive random sampling technique was used through balloting with replacement to select 20 (twenty) students each from the selected five (5) schools in Nkanu East Local Government Area of Enugu State. This is to give every member of the population equal chance of being selected. Instrument for data collection; a structured questionnaire prepared by the researcher which was face and content validated by two experts and experienced personnel both in Biology education and measurement and evaluation in Enugu State University of Science and Technology was used to collect data for the analysis. The reliability coefficient of their responses for the questionnaire was established using Cronbach Alpha because the responses were in different scales. A total correlation coefficient of 0.824 was obtained. Arithmetic mean was used to analyze data generated for the study.

Results

Results are presented in the tables according to the various research questions.

Research Question 1

What are the topics in biology the students find difficult to learn in secondary school in Nkanu East Local Government Area?

Table 1: Mean score of respondents on difficult topics in Biology difficult to learn.

S/N	ITEMS	VE
	Difficult topics in Biology are as follows:	4
1.	Genetics	12
		48
2.	Sense organs	24
		96
3.	Basic ecological concepts	23
		92
4.	Evolution	17
		68
5.	Variation	19
		76
6.	Pests and diseases of crops	21

Factors Responsible for the identified topics, students find difficult to learn are:		Implies that the students perceive item X 16,					
16.	Teaching are based theories	24	31	23	14	3.05	A
17.	Lack of adequate experiment	21	12	25	13	2.21	A
18.	Teachers lack adequate knowledge about the topics.	23	29	31	9	2.07	A
19.	Students do not pay attention to the teacher	18	22	20	34	2.22	D
20.	Students do not like biology	12	18	21	41	2.01	D
21.	Time allocated for biology lessons are not adequate	24	27	23	18	2.62	A
22.	The biology laboratory is not well equipped for practical works.	100	93	46	4	2.64	A
23.	Lack of instructional materials	22	28	32	10	2.67	A
GRAND MEAN		Local Government Area?			2.58	A	

The data in table 2 above indicates that high mean scores of 3.05, 2.67, 2.72, 2.62, 2.64, and 2.67 were obtained in item 16, 17, 18, 21, 22 and 23 respectively. This

Table 3: Mean score of respondents on ways to improving the identified topics they find difficult to learn.

S/N	ITEMS	VE
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Ways to improving the identified topics students find difficult to learn are:		4 items listed. The grand mean obtained was 2.71. This simply means that students agreed to the items as the ways of improving teaching and learning of the identified topics in biology in secondary schools in Nkanu East Local Government Area.					
24.	Reducing the content of biology curriculum	26	32	24	10	2.80	A
25.	Regular practical work	20	18	11	11	2.66	A
26.	Giving home assignment after each class	19	31	28	14	2.60	A
27.	Making biology teaching interesting	23	34	23	12	2.74	A
28.	Provision of adequate instructional materials	25	31	24	12	2.75	A
29.	Allocating more time for biology teaching in the school time-table	19	26	31	16	2.52	A
30.	Teachers should prepare adequately for biology classes	26	31	25	10	2.79	A
31.	Provision of adequate laboratory equipment for effective practical work	27	33	26	7	2.86	A
GRAND MEAN		2.71					A

Data in table 3 above indicates that high mean scores above 2.50 were obtained

biology and mostly topics that require practical works for easy understanding.

Research Question two determined the factors responsible to the identified topics students find difficult to learn in secondary schools in Nkanu East Local Government Area, the data were presented in table two, this factors include much theories, inadequate practical works, teachers lack of adequate knowledge about the topics, inadequate time for biology lessons, inadequate materials in the laboratories and lack of instructional materials. These findings are in line with the findings of Osuagwu (2013), who identified inadequate practical. He ascertained that the teaching and learning of biology cannot be effective without adequate practice work for students to observe. He maintained that through this process the students will be able to acquire science process skills and teaching will be made interesting for the students to learn.

Research question three determined the factors responsible to the identified topics students find difficult to learn in

secondary school. The data were presented and analyzed in table three, from the results; the students agreed that reduction in the content of biology curriculum, regular practical, home assignment, adequate instructional materials, more time for biology lessons, teachers adequate preparation and provision of adequate laboratory equipment are the ways to improving the difficult topics in biology.

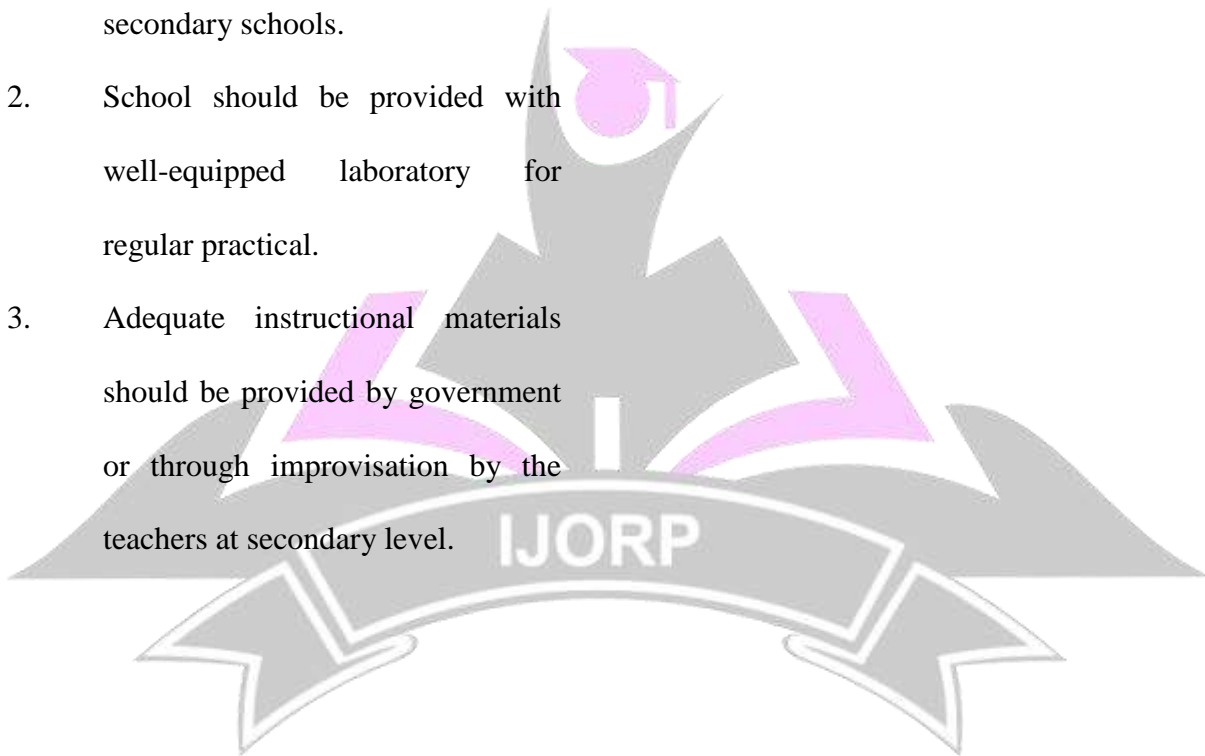
Conclusion

The findings of the study indicates that genetics evolution and the cell and it's environment are the topics identified as difficult to learn in biology. The study also revealed that the students identified most items in table two, as factors responsible for the identified topics difficult to learn in biology. Again, the students agreed to items in table three (3) as ways of improving their difficulties in learning the topics identified difficult to learn in biology.

Recommendations

Based on the findings of the study, the following recommendations were made;

1. Government should employ qualified and experienced biology teachers for effective teaching and learning of biology in senior secondary schools.
2. School should be provided with well-equipped laboratory for regular practical.
3. Adequate instructional materials should be provided by government or through improvisation by the teachers at secondary level.



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