

FIELD TRIPS: A VIABLE TOOL FOR STUDENTS' ACHIEVEMENT IN BIOLOGY

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Abstract

This study focused on field trips: A viable tool for students' achievement in Biology. The study was guided by two specific objectives and two corresponding research questions. The study adopted survey research design. The population of the study comprised all Biology teachers and students in public secondary schools in Enugu Education Zone, numbering 18,027, out of which 391 were sampled. A structured questionnaire was used for data collection. The questionnaire was face validated by three research experts. Reliability of the instrument was determined using Spearman Rank Correlation Coefficient which yielded an index of 0.84. Mean was used for answering the research questions. The findings of the study revealed that field trips influence students' attendance, students engagement and examination performance in Biology. Based on these, the researcher recommended that parents/guardians should encourage their wards to participate in field trips by way of sponsoring them whenever necessary. In the same manner, budgetary allocation to science education in secondary schools should be increased significantly; this will make way for sufficient finance for schools to arrange field trips for science subjects like Biology.

Introduction

Biology is one of the core science subjects taught in all secondary schools in Nigeria. As a science subject in school curriculum, Biology is designed to produce individuals some of whom may or may not take biological studies in their professional pursuits. It is however hoped that in whatever profession they finally find themselves, the Biology education they acquired in school would be of value to the totality of their education (Nwagbo, 2012). The Biology curriculum as a teaching syllabus has four main objectives derived from the National Policy on Education (2013). These objectives include: adequate laboratory and field skills in Biology, meaningful and relevant knowledge, ability to apply scientific knowledge to everyday life on matters of personal and community health and agriculture, as well as reasonable and functional scientific attitudes.

In accordance with the above stated objectives, the content and context of the syllabus place emphasis on field studies, guided discovery and conceptual studies and hence laying emphasis on practical approach on the teaching of Biology. The study of Biology involves both practical and theoretical work. Biology practical, according to Ndioho (2017), is any learning experience which involves students in activities such as observing, counting, experimenting, recording, observation and carrying out field work/trip. These activities are opposed to the theoretical work which involves listening to talk and taking down notes from such talks. Practical work is an aspect of great importance in the learning of Biology and yet one of the commonest errors observed in secondary schools is the teacher's omission of some practical work activities in the teaching. Even more neglected is the field trip aspect of practical lessons on the subject (Ajaja, 2010).

Field trip is an out of classroom learning where students are guided by the teacher to an environment where objects of learning are observed in their natural setting (Onah, 2017). It is an excursion taken outside the classroom for the purpose of making relevant observations and obtaining specific information (Ogbulujah, 2014). A well-planned field trip affords the students the opportunity to become actively engaged in observing, collecting, classifying, studying relationships and manipulating objects. It is usually planned to take students to places of interest and areas where relevant materials, information or knowledge is available for better teaching and learning of a particular subject matter (Amosa, Ogunlade and Atobatele, 2015). Using field trip in teaching and learning leads to teacher-learner interaction outside the classroom. These interactions take place in a new learning environment and result in a meaningful teaching and learning process. Fakomogbon, Ibrahim, and Gegele (2017) noted that the Biology curriculum requires child-centered and activity-oriented teaching and learning processes. Nowadays it is imperative to use different teaching methods and learning processes as well as strategies to ensure student understanding. Since field trip is a method of teaching used to collect firsthand information in the course of investigation, this will enable both teachers and students to create meaningful and productive learning both on the field and in schools. Amosa, Ogunlade and Atobatele (2015) explained that field trip can be used as a chance to collect data for later analysis, to generate artwork and stimulate discussions both on site and back at schools and universities in tutorials, seminars and workshops. No wonder West African Examination Council (WAEC) (2013) recommended that in pursuit of better and satisfactory student performance in science in Nigerian Secondary Schools examination, the study of science subjects should be supplemented by visits to well established government and private experimental and commercial establishment, agricultural research institutes and other institutions that are science-oriented. This recommendation has become an accepted practice as part of the curriculum and or extra-curricular activities in many secondary schools across the states of the federation.

Nwagbo (2012) noted that the use of practical activities like field trips in teaching Biology should be a rule rather than an option for teachers' growth. It is important to note that, among other things, academic achievement is a factor of classroom attendance, engagement and examination performance (Fabgenle and Elegbeleye, 2014). Fagbenle and Elegbeleye (2014) further explained that attendance is the physical presence of the students in schools/classes. It measures the level of regularity or absenteeism of a student. Classroom engagement, according to Mango (2015), is the extent to which students take part in educationally effective practices in the classroom. It is a term used to describe an individual's interest and enthusiasm for classroom lessons which impacts on his or her academic performance and behaviour. Therefore, it is the psychological process, specifically the attention, interest and investment and effort students expend in the work of learning (Ohamobi and Ezeaku, 2013). Examination performance is simply how well the outcome of students in examination is. It should not be forgotten that examination is the pivotal point around which the whole system of education revolves and the success or failure of the system of examination is indeed an indicator of the success or failure of that particular system of education (Olushola, 2016). From the above explanations, it can be deduced that students' academic achievement in Biology is measured by their regularity and punctuality to class, their involvement or participation in academic activities, and ultimately their performance in Biology examination. It is against this backdrop that the present study is focused on field trips: A viable tool for students' achievement in biology.

Statement of the Problem

Learning Biology is expected to be free from such problems as method of teaching, inadequate infrastructure facilities, and lukewarm attitudes of teachers towards using field trip. Student performance in Biology has been substandard over the years, specifically in the area of practical application. Ideally, in the teaching of Biology, the theory is supposed to be minimal because it is equally a practically oriented subject as it is theoretically oriented. Yet teaching of biology is still burdened with astronomical abstract concepts. With the above challenges, many students lose interest in the subject and as a result, record low attendance rate to Biology classes. These cause low rate of

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classroom attendance during Biology lessons. Sequel to poor class attendance, another fallout from the loss of interest in biology occasioned by theory-based teaching is lack of student engagement. With low rate of class attendance and lack of engagement in biology lessons, there will inevitably be poor students' performance in Biology examination – be it internal or external examinations. The researcher proposes that the above situation might not be the case should field trips be effectively integrated into the process of teaching biology in secondary schools, as it is practical-oriented and expected to make biological concepts concrete in the minds of students.

Research Questions

The following questions guided this study:

1. To what extent do field trips influence students' attendance to biology lessons in secondary schools in Enugu Education Zone?
2. To what extent do field trips influence students' engagement in biology lessons in secondary schools in Enugu Education Zone?

Methodology

This study adopted descriptive survey research design. The area of this study is Enugu Education Zone of Enugu State. The sample size for the study is 391, made up of 346 students and 45 teachers. The instrument for data collection is a questionnaire. The instrument was face-validated by three experts. A reliability index of 0.84 was obtained for the instrument using Spearman rank order correlation. The researcher with the help of research assistants administered the instrument directly to the respondents. The data was analysed in tables using mean. Any item that has mean of 2.50 and above was regarded as great extent, while mean scores below 2.50 was regarded as little extent.

Results

Research Question 1

To what extent do field trips' influence students' attendance to biology lessons in secondary schools in Enugu Education Zone?

Table 1(a): Mean and Standard deviation rating of students responses on the extent to which field trips influence students attendance to biology lesson in secondary schools in Enugu Education Zone

S/N	Questionnaire Items	VGE	GE	LE	$\frac{V}{LE}$	N	Σfx	\bar{X}	SD	Decision
1	The excitement of participating in field trips makes students punctual to Biology classes where field trips are discussed	134	130	43	39	346	1051	3.04	0.98	Great Extent
2	Students tend to regularly attend Biology classes in preparation for slated field trips	129	131	48	38	346	1043	3.01	1.01	Great Extent
3	Biology field trips encourage interactive lectures in the form of good student-teacher rapport	101	99	87	59	346	934	2.70	0.87	Great Extent
4	The practical experience of students from excursion encourage them to gladly do assignment and other resulting extra-curricula activities	108	132	75	31	346	1009	2.92	0.88	Great Extent
5	Depriving students the opportunity to partake in slated field trips for their class causes animosity and consequently student absenteeism	102	141	67	36	346	1001	2.89	0.79	Great Extent
6	Organising field trips for Biology students can discourage them from coming to class	58	43	143	$\frac{10}{2}$	346	749	2.16	0.94	Little Extent
7	An enlightening field trip improves students relations with their Biology teacher and likely increases their subsequent attendance to his/her class	133	121	59	33	346	1046	3.02	0.75	Great Extent
8	Students with prior phobia for Biology and record high rate of absenteeism to its lessons sometimes change their attitude after exposure to Biology excursion	128	139	47	32	346	1055	3.05	1.02	Great Extent
9	An academic term or session in Biology filled with adequate field trips will record more students' attendance than term/session without field trips	111	110	56	69	346	955	2.76	0.94	Great extent
10	Field trips or not, students will skip Biology classes regardless	78	58	99	$\frac{11}{1}$	346	795	2.30	0.85	Little Extent
Grand								2.79	0.90	Great Extent

Table 1(a) revealed that items 1,2,3,4,5,7,8 and 9 have mean scores of 3.04, 3.01, 2.70, 2.92, 2.89, 3.02, 3.05, and 2.76. All these mean scores are above the cut off point of 2.50. This implies that all these items were accepted by the students .Conversely, items 6 and 10 have mean scores of 2.16 and 2.30, both of which are below the 2.50 mean cut off point. This implies that these items were rejected by the respondents.

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Table 1(b): Mean and Standard deviation rating of teachers' responses on the extent to which field trips influence students attendance to Biology lesson in secondary schools in Enugu Education Zone

S/N	Questionnaire Items	VGE	GE	LE	V L E	N	Σ f x	\bar{X}	SD	Decision
1	The excitement of participating in field trips makes students punctual to Biology classes where field trips are discussed	18	15	7	5	45	136	3.02	0.82	Great Extent
2	Students tend to regularly attend Biology classes in preparation for slated field trips	21	14	6	4	45	126	3.16	0.77	Great Extent
3	Biology field trips encourage interactive lectures in the form of good student-teacher rapport	15	20	5	5	45	135	3.00	0.94	Great Extent
4	The practical experience of students from excursion encourage them to gladly do assignment and other resulting extra-curricula activities	19	16	7	3	45	131	3.13	1.04	Great Extent
5	Depriving students the opportunity to partake in slated field trips for their class causes animosity and consequently student absenteeism	17	19	5	4	45	129	3.09	0.79	Great Extent
6	Organising field trips for Biology students can discourage them from coming to class	7	8	14	1	45	96	2.13	0.98	Little Extent
7	An enlightening field trip improves students relations with their Biology teacher and likely increases their subsequent attendance to his/her class	15	16	7	7	45	129	2.87	0.88	Great Extent
8	Students with prior phobia for Biology and record high rate of absenteeism to its lessons sometimes change their attitude after exposure to Biology excursion	14	14	8	9	45	123	2.73	0.84	Great Extent
9	An academic term or session in Biology filled with adequate field trips will record more students' attendance than term/session without field trips	12	18	8	7	45	125	2.78	0.96	Great extent
10	Field trips or not, students will skip Biology classes regardless	6	5	11	2	45	84	1.87	0.68	Little Extent
Grand								2.78	0.87	Great Extent

Table 1(b) revealed that items 1,2,3,4,5,7,8 and 9 have mean scores of 3.02, 3.16, 3.00, 3.13, 3.09, 2.87, 2.73 and 2.78, all of which are above the cut off point of 2.50. This implies that respondents (who are teachers) agreed to a great extent with the provisions of these items. However, items 6 and 10 were rejected as evident in their mean scores of 2.13 and 1.87

Research Question 2

To what extent do field trips influence students' engagement in Biology lessons in secondary schools in Enugu Education Zone?

Table 2(a): Mean and Standard Deviation ratings of students on the extent field trips influence students' engagement in Biology lessons

S/N	Questionnaire Items	VGE	GE	LE	V L E	N	Σfx	\bar{X}	SD	Decision
11	Some biological practices learnt during field trips encourage students to read more of such subjects	133	131	40	4 2	346	1047	3.03	0.76	Great Extent
12	Too much abstract lecture on Biology without commensurate practical or sightseeing (excursion) cause students to become numb to classroom activities	136	141	36	3 3	346	1072	3.10	0.95	Great Extent
13	Students are excited to do class work/assignments resulting from field trips	124	159	31	3 2	346	1067	3.08	1.02	Great Extent
14	Without sightseeing or any other practical-oriented learning, Biology lessons becomes tedious for many students	119	149	41	3 7	346	1042	3.01	1.03	Great Extent
15	Knowledge on Biology gained through field trips are easy for students to apply in their everyday academic activities	125	145	39	3 7	346	1050	3.03	0.89	Great Extent
16	Good field trips command students co-operation and cause teachers to use less disciplinary measures to manage classroom activities	110	151	44	4 1	346	1022	2.95	0.66	Great Extent
17	Lessons from Biology field trips afford teachers fresh ideas with which to keep students interested in classroom lessons	117	156	43	3 0	346	1052	3.04	1.02	Great Extent
18	Unlike in typical classroom setting, during field trips students discuss more about the subject among their peers more than other non-academic issues	142	133	42	2 9	346	1080	3.12	0.97	Great Extent
19	Biology teachers find it difficult to get students cooperation during field trips	39	41	115	1 5 1	346	660	1.91	0.99	Little extent
20	Field trips guarantee students total commitment to Biology lessons	52	39	113	1 4 2	346	693	2.00	0.67	Little Extent
Grand								2.78	0.87	Great Extent

Table 2(a) showed that items 11 through 18 have mean scores above the mean cut off point. precisely, they have 3.03, 3.10, 3.08, 3.01, 3.03, 2.95, 3.04, and 3.12. The implication is that the respondents who are students agreed with the items. Items 19 and 20 have mean scores of 1.91 and 2.00, hence these items were rejected.

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Table 2(b): Mean and Standard Deviation ratings of teachers on the extent field trips influence students' engagement in Biology lessons

S/N	Questionnaire Items	VGE	GE	LE	V L E	N	Σf x	\bar{X}	SD	Decision	
11	Some biological practices learnt during field trips encourage students to read more of such subjects	17	17	6	5	45	136	3.02	0.88	Great Extent	
12	Too much abstract lecture on Biology without commensurate practical or sightseeing (excursion) cause students to become numb to classroom activities	16	19	6	4	45	137	3.04	0.98	Great Extent	
13	Students are excited to do class work/assignments resulting from field trips	14	16	8	7	45	127	2.82	0.89	Great Extent	
14	Without sightseeing or any other practical-oriented learning, Biology lessons becomes tedious for many students	14	19	7	5	45	132	2.93	0.87	Great Extent	
15	Knowledge on Biology gained through field trips are easy for students to apply in their everyday academic activities	17	19	6	3	45	140	3.11	1.01	Great Extent	
16	Good field trips command students co-operation and cause teachers to use less disciplinary measures to manage classroom activities	16	18	5	6	45	134	2.98	0.87	Great Extent	
17	Lessons from Biology field trips afford teachers fresh ideas with which to keep students interested in classroom lessons	15	20	4	6	45	134	2.98	1.04	Great Extent	
18	Unlike in typical classroom setting, during field trips students discuss more about the subject among their peers more than other non-academic issues	19	13	7	6	45	135	3.00	1.00	Great Extent	
19	Biology teachers find it difficult to get students cooperation during field trips	6	7	14	18	45	91	2.02	0.99	Little extent	
20	Field trips guarantee students total commitment to Biology lessons	7	8	12	18	45	94	2.09	0.66	Little Extent	
Grand								280	2.92	0.92	Great Extent

Table 2(b) revealed similar outputs as Table 2(a) as items 11, 12, 13, 14, 15, 16, 17 and 18 have mean scores of 3.02, 3.04, 2.82, 2.93, 3.11, 2.98, 2.98 and 3.00, all of which are above the 2.50 mean cut off point. This implies that these items were accepted by teachers. Items 19 and 20 have mean scores of 2.02 and 2.09 respectively, which mean that they were rejected by teachers.

Discussion of Findings

Research question one revealed that both teachers and students agreed that field trips influence students attendance to biology lessons in secondary schools. This finding is in line with the submissions of Ogbulujah (2014), Estawul, Sababa and Filgona (2016) and Salihu and Abubakar (2020), all of whom found a direct correlation between field trips and students classroom attendance in their individual studies.; In the same manner, Salihu and Abubakar (2020) illustrated that students performance are often improved when they are exposed to frequent field trips because it has a way of captivating students interest and fostering punctuality and regularity to class, which in turn improve their overall performance.

Research question two revealed that some biological practices learnt during field trips encourage students to read more of such subjects; too much abstract lecture on Biology without commensurate practical or sightseeing (excursion) cause students to become numb to classroom activities; students are excited to do class work/assignments resulting from field trips; without sightseeing or any other practical-oriented learning among others. In the same token, Behrendt and Franklin (2014) explained that field trips encourage students' involvement and participation in the teaching and learning process. Amosa, Ogunlade and Atobatele (2013) supported this position when they stated that the activities of field trips are usually interesting to students and encourage co-operative learning among students.

Conclusion

The following conclusions were drawn from the findings of the study:

1. Field trips influence students' attendance to biology lessons in secondary schools in Enugu Education Zone.
- 2 Field trips influence students' engagement in Biology lessons in secondary schools in Enugu Education Zone

Recommendations

The following recommendations were made:

- (1) Parents/guardians should encourage their wards to participate in field trips by way of sponsoring them whenever necessary. In the same manner, budgetary allocation to science education in secondary schools should be increased significantly. This will make way for sufficient finance for schools to arrange field trips for science subjects like Biology.
- (2) Policy makers in education, particularly in science education should adjust the science curriculum in secondary schools to make field trip an integral part of Biology lessons.
- (3)

References

- Aiaja, O.P., 2010. Effects of field studies on learning outcome in Biology. *Journal of Human Ecology*, 31(3),
- Amosa A.A., Ogunlade O.O. & Atobatele A.S. (2013). Effect of Field Trip on Students' Academic Performance in Basic Technology in Ilorin Metropolis, Nigeria. *Malaysian Online Journal of Educational Technology*. 3(2)
- Estawul, S.S., Sababa, L.K. and Filgona J. (2016). Effect Of Fieldtrip Strategy On Senior Secondary School Students' Academic Achievement in Geography in Numan Educational Zone, Adamawa State, Nigeria. *European Journal of Education Studies*. 2(12), 139-154
- Fagbenle I. and Elegbeleye E. (2014). Teaching secondary schools essay writing with African native culture. *World council for curriculum and instruction: region II forum*. 1, (1) 76-83.

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Fakomogbon U. Ibrahim Y. and Gegele W. (2017). The contemporary trend in instructional material usage. *Multidisciplinary journal of research development* 10 (7)25-29.

Federal Republic of Nigeria (2013). *National Policy on Education*, Federal Government Press Lagos, Nigeria

Mango (2015). The Psychological of adolescence and implication for guidance and Counselling in Nigerian Schools. *Psychology for every-day living*, 2 (1), 9-14.

Musa, N. N., Hasmi, N. A., Noor, S. M., Mahfodz, Z., Ismail, H. N., & Isa Osman, N. M. (2018). The Effectiveness of Field Trip in Enhancing Students' Learning Outcomes in Biodiversity Subjects. *International Journal of Academic Research in Business and Social Sciences*. 8(1), 918—929.

Ndioho A. (2017). *Principles and practice of Physics*. Ado Ekiti: Omolayo Standard Press, Nigeria.

Nwagbo I. (2012). *Teaching Resources in Education*. Okitipapa: Ebun-ola Printers (Nig) Ltd

Ogbulujah, J.N. (2014). The Impact of Student's Field Trips on Academic Performances in Agricultural Science in Selected Secondary Schools in Rivers State. *Research on Humanities and Social Sciences*. 4(17), 118-128

Ohamobi T. and Ezeaku J. (2013). Improvisation of science teaching Equipment: A journal of Science Teacher Association of Nigeria.3 (2),50-52

Olushola O. (2016). Mass failure and Nigeria's future. Retrieved from www.punchng.com/opinion/mass-failure-and-nigerias-future/

Onah H. (2017). *Fundamental Principles of Biology*. Ibadan: Evans Brothers publishers Ltd

Salihu, J.J. & Ahubakar I.D (2020). Effects of Educational Field Trips Oii Social Studies Students' Academic Achievement In Junior Secondary Schools In Kaduna State, Nigeria. *Education, Sustainability & Society (ESS)* 3(2), 41-44

West African Examinations Council (2013). *Executive Summary of Entries, Results and Chief Examiners Report, on the Wasse conducted in Nigeria*. Waec Headquarters, Accra, Ghana