

PEDADIDAKTIKA: JURNAL ILMIAH PENDIDIKAN GURU SEKOLAH DASAR



Effect of Fieldtrip Strategy on Academic Achievement of Senior Secondary School Biology Students in Ekiti Local Government Area of Kwara State, Nigeria

Adewumi Gabriel Segun¹, Muraina Kamilu Olanrewaju² ^{1,2}Prince Abubakar Audu University, Nigeria

Email: <u>adewumigabriel60@gmail.com</u>, <u>muraina_kamilu@yahoo.com</u> Submitted Received 23 October. First Received 23 November 2024. Accepted 27 December 2024 First Available Online 30 December 2024. Publication Date 30 December 2024

Abstract

This study determined the effect of field trip strategy on academic achievement of students' in Biology. The study adopted the pretest-posttest control group, quasi-experimental design. 80 SSII Biology students from two (2) coeducational schools in Ekiti Local Government Areas of Kwara State were randomly assigned to treatment group. The instrument used was Biology Student Achievement Test (r=0.86) and Teachers Instructional guides on Fieldtrip strategy. Two Research Questions and hypotheses guided the study. Descriptive statistics of means and standard deviation were used to answer the research questions and inferential statistics of Analysis of Covariance was used to test the hypotheses at 0.05 level of significance. The results of the study showed that fieldtrip strategy enhanced students' performance in biology than conventional method. There is a significant difference between the achievements mean score of the students exposed to fieldtrip strategy in biology and compare with their counterpart taught using conventional strategy. There was no significant difference between the mean achievement scores of male and female students exposed to fieldtrip strategy in biology and compare with their counterpart taught using conventional strategy. Based on the findings, biology teachers should adopt fieldtrip strategy to teach the students, so that they learn better as it could foster confidence in the students and improve their achievement. **Keywords:** Fieldtrip strategy, Achievement, Biology and Students

INTRODUCTION

Biology, as a science subject, and a prerequisite to many fields of learning, it occupies a unique position in the senior secondary school education programme. The reason for this is the fact that biology deals with the study of living things and has relevance to man's existence. Biology involves the study of physiology, biochemistry, anatomy, systems, genetics, evolution and ecology of plants and animals that contribute immensely to the scientific growth of Nigeria and the world at large. Biology plays a crucial role in every lives and touches almost every aspect of our existence it helps human life in many ways. It helps in increasing production of food, combating diseases and aids in protecting and conserving our environment. The advances in the field of biology have resulted in high standard of living in the field of food and health sectors. Production of plants has increased by improving the

@2024-PEDADIDAKTIKA: JURNAL ILMIAH PENDIDIKAN GURU SEKOLAH DASAR- Vol. 11, No. 4 (2024) 733-745 http://ejournal.upi.edu/index.php/pedadidaktika/index - All rights reserved varieties based on high yield, drought resistant and diseases resistant varieties of plants and animals that are used as food. Biology is an important field because all other fields of study are dependent on the facts that are revealed by the studies that are carried out in field of biology. Oluwole and Muraina (2016) reported that biology is the science of life. In addition, Ogundiwin (2013) stressed the importance of Biology in the following areas; health sector, management of natural resources, food supply and others.

The specific objectives to be achieved by Biology curriculum, as stated in the National Policy on Education, (FRN, 2014), include the following among others; to understand certain key biological concepts necessary for successful living and to illuminate the problems reproduction, growth, pollution, health and to disperse superstitions beliefs. Available statistics from West Africa Examination Council (2011-2019) and West Africa Examination Council (2011-2019) Chief Examiners Reports on senior secondary school student's performance in biology revealed a very poor and inconsistence performance at Senior Secondary Certificates Examinations. This is supported by Ogundiwin (2013) and Muraina, Umar and Kirti (2021) who expressed that the achievements of students in Biology remain low in Nigeria especially in public examinations. The analysis of Senior Secondary Certificate Examination (SSCE) Result in Table 1 made available from the West African Examination Council (WAEC) Statistics Unit on enrolment of students and their performance in Biology showed the extent of this problem. Table 1 showed the Percentage Distribution of Students' Performance in May/June Senior Secondary Certificate (SSCE) in Biology in Nigeria from 2010-2019.

734

Table 1: Percentage Distribution of Students' Performance in May/June Senior Secondary

Year	Total no of students	Total no of	% Credit % Failure
	that sat for the	credit passes	A1-C6
	examinations		
2010	1,300,418	427,644	33.90 66.06
2011	1,505,199	579,432	38.50 61.50
2012	1,672,224	649,156	38.81 61.20
2013	1,646,741	850,772	51.66 48.34
2014	1,356,243	511,956	29.34 70.66
2015	1,145,228	371,628	24.39 75.61

@2024-PEDADIDAKTIKA: JURNAL ILMIAH PENDIDIKAN GURU SEKOLAH DASAR- Vol. 11, No. 4 (2024) 733-745 http://ejournal.upi.edu/index.php/pedadidaktika/index - All rights reserved Adewumi¹, Gabriel Segun², Muraina Kamilu Olanrewaju³

62.48

75.01

35.52

23.93

Effect of	Fieldtrip Strategy on Acade	emic Achievement of Senio	o r Secondary Sc	hool Biology Stud	ents in Ekiti Local Government
20-16	1,200,367	740,345	61.68	36.32	
		-			
2017	580,449	394,299	68.03	30.92	

Sources: Statistics Section, WAEC National Head Office, Yaba Lagos, 2020 Nigeria

678,299

775,103

The table 1 showed the percentage of credit passes and failure from year 2010 to 2019. In year 2013 and 2016 to 2019, good academic achievement was recorded in which the percentage credit passes jumped from 38.81% to 75.01% and the percentage failure dropped from 61.20% to 23.93%. But, subsequent years (after 2013) , the percentage of passes drastically reducing from 51.66% to 24.39%, while the percentage of failure was increased from 48.34% to 75.61% .The students performances were inconsistent in the years under consideration. It is glaring that the percentage numbers of students that pass Biology at the Credit level fluctuates over the examined years (2010 -2019). For example, in Year 2016, 61.68% of students passed at credit level. In Year 2017, it jumped up to 68.03% but descended to 62.48% in Year 2018. Year 2019 student make high improvement with 775,103 students out of 1,033,304 which is 75.01% passing at credit level.

The drop and inconsistent in the percentage of credit passes may be as a result of changed in the subject status from compulsory to elective for secondary school students (FRN, 2013). The percentage passes for the year 2010 to 2012 and 2014 to 2015 were not good enough especially for most candidates that may have included Biology as one of the relevant five subjects, passed at credit level in order to be admitted into any higher institution in Nigeria to read biology related course. This was supported by Ogundiwin (2013) and Muraina, Umar and Kirti (2021) who opined that students' performance in biology is poor despite several crucial efforts that have continually been made over the years to remedy the yearly poor performances. This was supported by West Africa Examinations Council's (WAEC) Chief Examiner's Reports (2010, 2011, 2012, 2013, 2014, 2017 and 2018). Specifically, in WAEC (2014) Chief Examiner's report revealed candidate poor performance in WAEC May/June examination.

Frankly speaking, achievement needs to be improved upon on the students through teaching using appropriate instructional strategies. Among the strategies that have been previously used are; Experiential strategy by Muraina, Umar and Kirti (2021), Inquiry strategy by Laksama (2017), Critical

2018

2019

1,087,063

1,033,304

exploration strategy by Oluwole and Muraina (2016), Adewumi (2014), Puzzled Based Critical Thinking Motivation Strategies by Ogundiwin (2013). In spite of all these strategies, students still experienced high rate of poor performance in the senior secondary school certificate examination as seen in Table 1. The poor performance of students in achievement in Biology have all been attributed to the inappropriate strategies of teaching mainly employed by most Biology teachers. Researchers have revealed that the teacher-centered strategy normally used by the teachers would not assist the learners to be active recipient of knowledge by which the achievement can be improved (Muraina, 2016; Muraina, Umar and Kirti, 2021). Scholars (Adewumi and Adeoye, 2023; Ibitoye, 2021; Muraina, 2016; Ogundiwin, 2013) have therefore suggested the use of active learning strategies to take care of the deficiencies. In combating the situation, the research works of (Sunday, 2021; Oloidi and Adeyemi, 2020; Musa et al., 2018; Ejeh, Adejoh, Ochu and Egbe-Okpenge, 2021) suggest the use of fieldtrip in improving the learning of biology.

Field trip is an outdoor or field work or learning exercise undertaken by teachers and students in certain aspects of a subject to give students the opportunity to acquire knowledge. It may also be referred to as trips to various places to obtain information directly by seeing things as they really are (Muraina, 2016). Educational field trips, according to Shakil, Faizi and Hafeez (2011), is a progressive method of learning by which the student goes through the necessary learning experiences under the leadership and guidance of the teacher. Oka and Samuel (2020) define a field trip as an excursion or journey beyond the classroom with the goal of having first hand observations and obtaining specific information. It is a biology teaching technique that enables personal encounter with organisms in their natural surroundings (Zumyil, 2016). It is helpful in developing the complete personality of the students like their physical, mental, social and emotional development. Educational field trip gives students the opportunity to have first-hand experiences and to explore world. It helps students to interact with what they are learning. Field visits make schoolwork more tangible and memorable by connecting it with the outside world. A field trip sparks questions and ideas at the start or end of a lesson. It is one of the most interesting and enjoyable experiences for kids studying science, particularly Biology (Zumyil, 2016). The goal of a field trip is to supplement the curriculum by providing students with hands-on experience, concrete skills such as note-taking, and interaction in the real world, which makes learning more meaningful and memorable. Zumyil (2016) agreed that field trips, when correctly planned, allow students to become actively engaged in observing, collecting, classifying, investigating relationships, and manipulating things, as well as get a deeper grasp of specific concepts and occurrences.

In the course of focusing on the students' performance, gender was factored in. Gender has also remained an important issue which is relevant to the field of education because it has been linked with students' achievement. Gender refers to the classification of human being on the basis of sex due to the roles they perform. Most studies show that on the average girls do better in school than boys (Adewumi and Adeoye, 2023). The study of Yuniskurin, Noviyanti, Mukti, Mahana, and Zubidah (2019) also show that female is better at spelling and perform better on tests of literacy, writing and general knowledge in education. In contrast, Muraina, Umar and Kirti (2021) and Muraina (2016) showed that women were not only under-represented but their levels of achievement in the fields of sciences and technology where low compared to the males.

Many studies had been carried out on similar topic both at the national and international levels, focusing on the use of instructional strategies to improve students' achievement. Works have been carried out on the strategy and gender separately on different subjects. However, not much has been done using the strategy and gender in the area of skeleton in Biology. It is this gap that this research work stands to fill. This research work seeks to find out the effects of that fieldtrip strategy will have on students Achievement on concept of skeleton in Biology. It also, examined the influence of gender of the students on the concept of skeleton in biology.

STATEMENT OF THE PROBLEM

As important as Biology is to career pursuant in sciences it is courses, disheartening that students' achievement in the subject at the senior secondary school level is becoming worse than in the other subjects particularly in Kwara State. Infact, the students' learning outcomes have not been encouraging. Reports from both national and international examination bodies have shown that students record low achievement in the subject; a trend which probably is due to teacher-centered teaching strategies that biology tutors employed in teaching the subject in the senior secondary schools. Scholars have thus indicated the need for the adoption of active teaching and learning instructional strategies to address this deficiency. By the use of these new and active strategy, they have also suggested that the level of success in biology education by students will also improve. Literatures have documented the effectiveness of fieldtrip strategy in enhancing students' learning outcomes in Physics and Chemistry without considering their effects on students' achievement in Biology. The strategy has also been used to enhance students' achievement in English language. This study, therefore, determined the effects of fieldtrip on academic achievement of students in Biology in Ekiti Local Government Area of Kwara State. The moderating effect of gender was also examined.

Purpose Of The Study

The purpose of this study was to investigate the effect of fieldtrip strategy on students' Achievement in biology in Kwara State. Specifically, the study sought to:

- Determine the difference between the achievements mean score of the students exposed to fieldtrip strategy in biology and compare with their counterpart taught using conventional strategy.
- Examine the difference between the mean achievement scores of male and female students exposed to fieldtrip strategy in biology and compare with their counterpart taught using conventional strategy.

RESEARCH QUESTIONS

Two research questions were formulated to guide the study.

- What is the difference between the achievements mean score of the students exposed fieldtrip strategy in biology and compare with their counterpart taught using conventional strategy?
- 2. What is the difference between the mean achievement scores of male and female students exposed to fieldtrip strategy in biology and compare with their counterpart taught using conventional strategy?

HYPOTHESES

To guide the study two null hypotheses were formulated and were tested at 0.05 level of significance:

H01: There is no significant difference between the achievements mean score of the students exposed to fieldtrip strategy in biology and compare with their counterpart taught using conventional strategy.

H02: There is no significant difference between the mean achievement scores of male and female students exposed to fieldtrip strategy in biology and compare with their counterpart taught using conventional strategy.

METHODOLOGY

This study adopted the pretest-posttest control group quasi-experimental research design. The study involved two groups: experimental and control group which was drawn from the population of the senior secondary class two (SSII) in Ekiti Local Government Area of Kwara State. The experimental group was thought skeleton using fieldtrip strategy while control group was thought skeleton using lecture method. The population of the study consists of 920 senior secondary school year two students in ten (10) public schools in the study area. The sample of the study made up of eighty (80) SSII students comprising 36 males and 44 females. Simple random sampling technique was used to select the sample for the study. Two (2) schools were selected out of ten (10) schools for the study. Therefore, one (1) intact class was selected from each of these schools. The two schools with their intact class were sorted and randomly assigned to two groups that was experimental and control groups respectively. The experimental group was exposed to fieldtrip strategy while the control group was to lecture method.

The instrument used for the study was Biology Students Achievement Test (BSAT) which was constructed by the researcher. The instrument consists of two sections: Section A and B, Section A was for students' bio-data information while section B consisted of fifteen (15) items, four (4) option multiple choice test. The instrument was validated by one secondary school biology teacher who is a seasonal WAEC/NECO examiner and two (2) University lecturers one (1) from department education of science and one from department of test and measurement. The pretest and posttest marking schemes, as well as the lesson notes for the both experimental and control groups was developed by the researcher were examined for face validity and appropriateness for the two groups. The achievement instrument (BSAT) was pilot tested to establish its reliability. A reliability index of r = 0.86 was obtained.

The biology achievement test was administered to both students in the experimental and control groups. The data collected were subjected to both descriptive and inferential statistics. The research questions were answered with the use of means and standard deviation while research hypotheses were tested using inferential statistics, Analysis of Covariance (ANCOVA) at 0.05 level of significance.

RESULTS

Research Question one (1): What is the difference between the achievements mean score of the students exposed fieldtrip strategy in biology and compare with their

counterpart taught using conventional

```
strategy
```

Treatment	N	Pre-te	st	Post-test		Means
		X1	SD1	X2	SD2	Difference
Fieldtrip	34	44.57	10.64	57.68	11.63	+13.52
strategy						
Lecture	46	44.94	11.39	51.72	11.76	+6.78
method						

Table 2: Descri	ptive Statistics of	Achievement	Associates with	Treatment
-----------------	---------------------	-------------	-----------------	-----------

Table 2 revealed the descriptive statistics of achievement associates with treatment scores for students exposed to fieldtrip and compare with their counterpart taught using lecture method. The result revealed that before the treatment, biology students in fieldtrip group had performance mean score of (44.57), while lecture method teaching group had performance mean scores of (44.94) with mean difference of (0.37) which is marginal. Their measure of variability had a difference of (0.75). After the treatment, the biology students exposed to fieldtrip had performance mean score of (57.68), while lecture method teaching group had performance mean scores of (51.72) with

mean difference of (5.96) which is marginal. Their measure of variability had a difference of (0.13). The result revealed that the mean gain for the students in the experimental group (13.52) was greater than the mean gain (6.78) of those in the control group. This implies that student expose to field trip methods did better than those to expose to lecture method.

740

Research Question Two: What is the difference between the mean achievement scores of male and female students exposed to fieldtrip strategy in biology and compare with their counterpart taught using conventional strategy?

Table 3: Descriptive Statistics of Achievement scores Associates with Gender

Gender	Ν	Pre-te	Pre-test		Post-test			Means	
		Mean	SD		Mean		SD	Difference	
Male	36	31.29	6.35		36.52		6.48	6.23	

@2024-PEDADIDAKTIKA: JURNAL ILMIAH PENDIDIKAN GURU SEKOLAH DASAR- Vol. 11, No. 4 (2024) 733-745 http://ejournal.upi.edu/index.php/pedadidaktika/index - All rights reserved

/	L Contraction of the second
	Adewumi ¹ , Gabriel Segun ² , Muraina Kamilu Olanrewaju ³
	Effect of Fieldtrip Strategy on Academic Achievement of Senio r Secondary School Biology Students in Ekiti Local Government

Female	44	31.48	5.03	36.40	5.89	5.92
--------	----	-------	------	-------	------	------

Table 3 revealed the mean gain of 6.23 for male students in fieldtrip strategy class while the female in the same class had 5.92 with a mean difference of 0.31 in favour of the male students. This means that the male students received instruction and gained more in fieldtrip class compared with the female students in the same class. By implication, fieldtrip strategy facilitated achievement more among the male students in biology compared with the female students

7/1

in the same class. Therefore, fieldtrip strategy enhanced male student's achievement in biology better than the female students.

HYPOTHESES TESTING

 H_01 : There is no significant difference between the achievements mean score of the students exposed to fieldtrip strategy in biology and compare with their counterpart taught using conventional strategy

	Type III Sum of		Mean			Partial Eta
Source	Squares	Df	Square	F	Sig.	Squared
Corrected Model	1122.082	2	5613.041	130.471	0.001	0.209
Intercept	1411.176	1	1411.176	168.536	0.000	0.353
Pre-Test BSAT	79.460	1	79.460	27.27	0.003	0.008
Treatment	2110.624	1	2110.624	49.060	0.000*	0.095
Gender	53.919	2	26.960	0.925	0.397	0.006
Error	9731.200	74	29.135			
Total	113511.000	78				
Corrected Total	12298.820	76				

Table 4: Analysis of Covariance	(ANCOVA) of Post-Achievement b	<pre>/ Treatment and Gender</pre>
---------------------------------	--------------------------------	-----------------------------------

R S R Squared = 0.729 (Adjusted R Squared = 0.723) * denotes significant p<0.05

Table 4 shows the result of Analysis of Covariance (ANCOVA) in order to test for hypothesis one. The table revealed that the calculated F value (49.06) at (1.99) degree of freedom gave a calculated significance of (0.000) which is less than alpha level of significance 0.05 (p<0.05). Thus, null hypothesis is thereby rejected and the alternative hypothesis is accepted; which means that there is a significant difference between the post-test score of the students exposed to fieldtrip and compared with their counterpart taught using lecture method. **H02:** There is no significant difference between the mean achievement scores of male and female students exposed to fieldtrip strategy in biology and compare with their counterpart taught using lecture method.

Table 4 showed that with $F_{(1, 76)} = 0.925$; p = 0.397 < 0.05, there is no significant difference between the mean achievement scores of male and female students taught biology using fieldtrip strategy . This means that the difference in mean between male and female students in fieldtrip strategy class in boil.ogy was not statistically significant. Thus, the null hypothesis is not rejected and it is therefore concluded that there is no significant difference between the mean achievement scores of male and female students taught biology using fieldtrip strategy.

DISCUSSION OF FINDINGS

The findings of the study revealed that there is significant difference between the post-tests score of the students exposed to fieldtrip and compare with their counterpart taught using lecture method (p 0.00<0.05). The students in the experimental (fieldtrip method) group had a higher mean performance score in the biology concept (skeleton) taught compared to their control (lecture method) group counterparts. This shows that this method (field trip) of instruction in which students are exposed to helped the students to perform better in the concept of skeleton in biology. Te result is in line with finding of Sunday, (2021) who investigated the impact of field trips on the academic performance of secondary school students in ecology concepts in Zaria Local Government Area, Kaduna State, Nigeria. Sunday (2021) found that field-trip teaching strategy favoured the experimental group in teaching and learning ecology concept in biology. Njoku and Mgbomo, (2021) who also investigated the effect of field trip and demonstration methods of teaching on students' achievement in Biology found that field trip teaching method better enhanced students' achievement in Biology than demonstration method.

Furthermore, the findings of the study revealed that fieldtrip strategy facilitated the achievement of among the male biology students more than the female biology students in the same class. However, there was no significant difference between the mean achievement scores of male and female students taught integrated science using fieldtrip strategy. This finding is in consonant with Ahamed (2021) who reported that there was no significant difference between the mean achievement scores of male and female peer-collaborative learning strategy. Also, this finding disagrees with that of Ogbu (2023) who argued that female students showed more interest than the male students in algebra using group algebraic blocks strategy. The follow up of this finding is that fieldtrip strategy is gender friendly as it gives both male and female opportunities to learn and achieve on a near equal basis.

CONCLUSION

The finding of this research study has established that fieldtrip strategy is superior to lecture method as it enhanced student's achievement in biology better than lecture method. Additionally, fieldtrip strategy proved to be non-discriminatory for it is gender friendly thereby enhancing achievement of both male and female student at near equal level.

Recommendations

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

- Biology teachers in Nigeria senior secondary schools should be encouraged to deliver instructions in biology via fieldtrip strategy.
- Teachers of biology should embrace the innovative teaching strategy by using fieldtrip strategy in order improve the

performance of students in biology. Also, fieldtrip strategy is gender friendly

 Seminar and workshops should be organize regularly for biology teachers where the various steps involved in fieldtrip would be discuss.

REFERENCES

- Adewumi, G.S. and Adeoye, A. A. (2023). Interaction effect of two instructional strategies and mental ability on students' achievement in genetics concepts in biology. Journal of Science, Technology and Mathematics pedagogy. 1 (1), 69-81
- Adewumi, G.S. (2014). Effect of project and inquiry strategies on students' academic achievement in some selected abstract concepts in biology. An unpublished M.Ed Thesis, University of Ibadan.
- Ahmed, A. A. (2021). Effect of Peer –
 Collaborative learning Strategy on PreService Teachers' Performance in
 Integrated Science in Nigerian Colleges
 of Education. Journal of Science,
 Mathematics and Technology Education
 (JSMTE). 2, 60 66
- Chukwuemeka, P.C. (2011). Competency-Based Biology Teacher Education Section Reforms in Nigeria. Proceeding of the 52nd Annual Conference Science Teacher Association of Nigeria, 217-224.

- Ejeh, G. U., Adejoh, M. J., Ochu, A. N. O. and Egbe-Okpenge, E. G. (2021). Effects of Field Trip and Discovery Methods on Senior Secondary School Students' Retention in Biology in Benue State, Nigeria. Village Math Educational (VER), 2(1), 54-77. Review https://ngsme.villagemath.net/journals /ver/v2i1/ejeh-adejoh-ochu-egbeokpenge
- Federal Ministry of Education. (2014). National curriculum for Senior Secondary school biology. Lagos: NERDC
- Laksama, D. N. L. (2017). The effectiveness of inquirybased learning for natural sciencelearning in elementary schools. Journal of Education Technology, 1(1),1-5.
- Muraina, K. O. (2016). Effects of Motivational Enhancement Therapy and Self-Monitoring Skill Training on Mathematics Learning Readiness and Gains among School-Going Adolescents in Oyo State, Nigeria. Unpublished Ph.D Thesis, University of Ibasdan, Ibadan, Nigeria
- Muraina, K. O., Umar, T.I and Kirti, V. (2021). Teachers' Improvisation of Instructional Materials and Mathematics Learning Gains among Students in Kwara State: Counselling Implications. JTAM (Jurnal Teori dan Aplikasi Matematika/ Journal

- of Mathematical Applications in Education), Vol. 5, No. 2, 315-3229.
- Musa, N. N., Hasmi, N. A., Noor, S. M., Mahfodz, Z., Ismail, H. N., and 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.
- Njoku, S. E and Mgbomo, P. B. (2021). Effect of Field Trip and Demonstration Methods on the Achievement of Secondary School Students in Biology. Rivers State University Journal of Education (RSUJOE), 24(2):55-64
- Ogbu, N. A., Chibike, C. and Tagwail, H. G. (2023). Effect of Group Algebraic Blocks Strategy on Upper Basic Students in Algebra in Municipal Area Council Abuja. Nigeria. Journal of Science, Technology and Mathematics pedagogy. 1 (1), 81 - 88
- Ogundiwin, O. A. (2013). Effect of Pretheoretic Intuition Quiz and Puzzlebased critical thinking motivation strategies students learning on outcomes in selected environment related concepts, in biology. Unpublished Ph.D. Thesis University of Ibadan.

- Oka, U. A. and Samuel, I. R. (2020). Effect of field trip instructional strategy on students' interest and achievement in Ecology in Nasarawa State, Nigeria. International Journal of Innovative Education Research, 8(2) 27-33.
- Oloidi, Y. Y and Adeyemi, P. Y. (2020). Effectiveness of Field-Trip and Peer-Tutoring Learning Strategies on Junior Secondary School Students Achievement in Social Studies in Osun State, Nigeria. Journal of Educational System, 4(1), 12-21.
- Oluwole, D. A and Muraina, K. O. (2016). Effectiveness of Motivational Enhancement Therapy in Enhancing Mathematics Learning Gains among School-Going Adolescents in Oyo State, Nigeria. The Pacific Journal of Science and Technology, 17(1), 140-151.
- Shakil, F. and Hafeez, H. (2011). The field trip in Biology. New York, Journal of School Science and Mathematics 28(22)31
- Sunday, A. (2021). Investigated the impact of field trips on the academic performance of secondary school students in ecology concepts in Zaria Local Government Area, Kaduna State, Nigeria. International Journal of Innovative Education Research, 8(2) 27-33.
- West Africa Examination Council. (2021). West Africa Examination Chief

Examiner's Report. Retrieved from http://www.waeconline.org.ng/elearning/Biology/Bio218mw.html

- Yuniskurin, I. D., Noviyanti, N.I., Mukti, W. R., Mahanal, S., and Zubaidah, S. (2019).
 Science Process Skills Based on Genders of High School Students. International Seminar on Bioscience and Biological Education. Journal of Physics Conference Series, 12(41), 78-82
- Zumyil, C. F. (2016). Effects of computer simulation and field trip instructional strategies on students' achievement and interest in ecology in Plateau Central Education Zone, Nigeria. Unpublished PhD thesis, Benue State University, Makurdi.