



Effect of Fieldtrip on Secondary School Students' Attitude in Physical Geography Concepts in Dutsin-Ma, Katsina State, Nigeria

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ABSTRACT

The study investigated the effect of fieldtrip on secondary school student's attitude in physical geography concepts in Dutsin-ma Zone, Katsina State Nigeria. The study used quasi experimental involving pre-test and post-test design. The instrument used for the study is Physical Geography Concepts Attitude Questionnaire (PGCAQ) developed by the researchers and administered to 202 sampled students from the population of 3557. The instrument was validated and the reliability coefficient of PGCAQ was found to be 0.8. Experimental group was taught using field trip, while control group was taught using the lecture method. two research questions were developed and analyzed using descriptive statistics of mean and standard deviation, and two Null hypotheses were verified at $P \leq 0.5$ level of significance using Kruskal Wallis and Skewness. The result revealed that there is no significant difference in the attitude of students exposed to field trips and those taught using the lecture method. $P = 0.036$ Female students in the experimental group developed a higher positive attitude than subjects in the control group. $N = 62.26$, $p = 0.003$. Based on the findings the researchers recommended that, geography teachers and the Ministry of Education should encourage and support more research on how to improve students' positive attitude towards physical geography. Workshops and seminars should also be organized by professional bodies for teachers on how to use more innovative strategies that can effectively enhance students' attitudes towards physical geography and science subjects in general.

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INTRODUCTION

There was several attempts by Federal Government of Nigeria to

enhance educational systems so as to face the challenges of the 21st Century this led to a series of curriculum changes

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with a view to attain the goals in technological advancement. Therefore, the curriculum content in Nigeria was reviewed in line with the trend of events in our changing world and the need of the learners hence, the contents give much attention and emphasis on science and technology, computer literacy, information technology, environmental studies like environmental pollution, degradation, global warming, climate change among others.

In light of the above, geography as science and a field of study enables students to comprehend features on the earth from a spatial point view. It offers an organized structure for enquiry into questions about the world that surround us. (Jana, and Patra, 2017). Geography is an inclusive subject, encloses the entire observable province of earth's surface and is experienced as part of science, arts as well as social science discipline in schools, it help in preparing learners in the development of their observation skills, critical thinking ability, understanding and adopting to their immediate environment which enable them to face the challenges of 21 century which Nigerian education system is aiming to fight (Alam 2016). Balasubramanian (2016) views geography as a basic science subject for all human beings to learn, it is essential academic field for all works of life as it study location and spatial variation in both physical and human phenomena on earth.

Similarly, geography as a field of learning in which characteristics of

particular place on the earth's surface are examined; it is concerned with the arrangement of things and with the association of things that distinguish one area from another; it is concerned with the roles of man and his interactions with the environment (Aggarwal 2007). According to Iwena (2008), Geography is a field of study in which physical things within the earth such as rocks, mountain, plains, ocean, river, climate and vegetation are studied. In the same vein, Okam (2009) defines geography as the science of the earth which concerns with Physical Geography, Human Geography, Interface geography and Biogeography. However, according to National Policy on Education (FGN 2013), the objectives of teaching geography have been thought of in terms of what geography can contribute to the realization of aims of secondary education in Nigeria, these objectives are to; giving learners a sound knowledge of their immediate environment; developing in learners the ability to comprehend and explain natural phenomena; to inculcate in learners useful skills and outlooks which will enable them to make useful contributions to their community and nation at large; developing in learners the critical thinking ability, accuracy and objectivity for proper and logical investigation; to foster in learners a sense of responsibility towards their own society; developing in learners a comprehension of spatial relationship of various features on the surface of the earth as well as enabling learners comprehend the habitation of man within his environment.

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The scope of geography covers a wide area, its subject matter lends to and borrow sciences like physics, chemistry, mathematics, and astronomy on one hand and natural and humanistic studies like botany, zoology, anthropology, sociology, and history on the other (Varma 2007). Similarly, geography employs scientific methods of mathematics, statistics, computer models, remote-sensing and Geographic Information System (GIS), landforms features among others.

Significance of geography cannot be overemphasized as it has a place in one's intellectual development; it offers training by focusing on 'what', 'where', 'when' and 'why' of phenomena through space and time. Students gain ability to evaluate geographically the earth on which they live, to trace cause and effects, and to note relationship. They gain knowledge of other people and their way of living, their products, and culture. It is also a highly versatile subject allowing a variety of combination of professional courses like architecture, urban and regional planning, estate management, land surveying, military studies, business administration and education (Abegunde 2009).

Methods and strategies for teaching geography have been forwarded by Okam (2009), Such methods include; demonstration, field trip, heuristic, project and laboratory, to mention but few. Moreover, the effectiveness of methods and their relevance to student's academic performances were examined by Varma (2007), who stated that geography as a

school subject needs a field experience, which means field trip and excursion which present object in its natural colour. Field trip also trains learners on observation, thinking, recording, discussing, co-operation and even leadership. Field trip presents natural objects like land forms, soil types, rivers, mountains and seaside which help in explaining concepts like erosion, deposition, valleys which enhance students' understanding. Gellenstien (2004) agreed that inquiry method can be effective if learners actively participate during the process of learning, they are more likely to remember concepts and information if allowed to discover them by themselves.

Lecture method involves verbal presentation of ideas, concept, and generalization of facts. In lecture method, the teacher does most of the talking. It is less tedious, saves time and provides fascinating and aesthetically stimulating experience especially for the new students on topics of interest (Obeka, 2009). However, lecture method is teacher-centred with little or no participation of students. In lecture method, students remain passive listeners (Joshi, 2008).

Despite the relevant methods and strategies proposed by scholars, there are yet numerous problems of teaching geography in schools. Eno (2007) highlighted that teachers frequently adopt wrong methods of teaching. However, Eno (2007) classified teaching methods into two (2); that which relies on the learners observing directly



what can be seen, and that which relies on the learners observing from second-hand materials. Geography teaching will not be right if it becomes essentially bookish study. Therefore, science teachers should ensure that teaching and learning process is based on scientific attitude by encouraging students to find out as much information for themselves under the guidance of the teacher (hands-on and mind-on). The problems of teaching and learning of geography is associated with inadequate qualified teachers. No matter how the curriculum is, if there are no qualified teachers, the goals may not be achieved (Olorukooba 2012).

Instructional strategies adopted by teachers in teaching-learning process have influence on students' attitude (Okam 2009). Similarly, Atadoga (2008) stated that instructional strategies adopted by teachers at all levels of education in imparting knowledge and skills to the learners are determined by teachers abilities, topic to be taught, learners age, population, available resources and space. Hence, instructional strategies have influence on students' attitude.

Attitude as a variable in this study and a factor in the learning of science is defined as an internal state that influences the personal action of an individual (Gagne, 1977). He further recognized attitudes as a major factor in subject choice. Attitudes are acquired through learning and can be changed through persuasion using variety of techniques. Attitudes, once established,

help to shape the experience an individual has with object, subject or person. Attitude changes gradually. People constantly form new attitudes and modify old ones when they are exposed to new experiences (Adesina and Akinbobola, 2005). Teaching strategies can also influence the attitude of students positively or negatively. Olorukooba (2001) reported that students taught using cooperative learning strategy in science has positive attitude and derived more educational benefits from group work. It is on the basis of teaching and learning of geography, that this research sought to find out the impact of field trip on student's attitude in physical geography concepts among secondary school students in Dutsin-ma Education Zone of Katsina State.

Statement of the Problem

Students' negative attitude towards learning physical geography is attracting the attention of concerned stakeholders in the Nigerian education sector, the West Africa Examination Council (WAEC) chief examiner's report indicated that, students develop less interest in answering questions from physical geography section. This brings about rampant failure of students in the subject with only few candidates obtaining the requirement for further studies into Nigerian higher institutions.

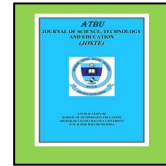
In line with persistent negative attitude of geography students which may be due to lack of effective use of teaching methods and skills, this study sought to determine if the use of field trip will

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enhance geography students' attitude or not. In an effort to find out the causes of students negative attitude in geography, a study was carried out by Salisu (2019) indicating that more than 70% of geography students in secondary schools in Katsina state lack positive attitude in learning physical geography. Similarly, Nwagbo (2001) has discovered that many science teachers prefer the traditional lecture method of teaching in which one person (the teacher) presents a spoken discourse on a particular subject and shy away from activity oriented teaching methods which are student-centred such as discovery method, field trips and computer-based science simulations method among others. Nwagbo (2006) stresses that such teacher-centred approach which places the teacher as sole possessor of knowledge may not enhance or promote students' positive attitude towards learning.

Researches have been carried to improve students' attitude in learning geography in Nigerian secondary schools. Maikano (2007) and Usman (2010) worked on the impact of laboratory teaching strategy, their findings show significant difference in favour of laboratory strategy in promoting students' positive attitude and academic performance. However, there still exists a gap in the application of fieldtrip to find out its effectiveness towards improving students' attitude in learning geography in particular and science in general. Similarly, limited literatures exist on the impact of fieldtrip on student's attitude at secondary schools in the study area. This

situation necessitated the need for more effective methods of redressing the situation, hence, exposing students to field trips and to see whether the method can improve students' attitude in learning physical geography concepts in the study area.

Objectives of the Study

The study is guided by the following objectives to:

1. find out the effect of field trip on students' attitude in learning physical geography concepts of senior secondary schools.
2. determine the effect of field trips on male and female students' attitude in learning physical geography concepts of secondary schools.

Research Questions

The following research questions guide this study.

1. What is the mean difference among students' attitude in physical geography concepts and those exposed to field trip and lecture method?
2. What is the mean difference among male and female students' attitude in physical geography concepts and those exposed to field trip and lecture method?

Null Hypotheses

The following null hypotheses guide the study.

H01: There is no significant difference between the attitude of students taught physical geography concepts using field



trip and those taught through lecture method

H02: There is no significant difference between the attitudes of male and female students taught physical geography concept using field trip and those taught through lecture method.

Significance of the Study

The outcome of this study is hoped to be used by teachers, students, Relevant Ministries, Association of Nigerian Geographers (ANG) and researchers, among others

1. **Teachers:** are hoped to benefit teachers in their choice of effective and relevant methods in teaching geography.
2. **Students:** are also hoped to benefit and adjust in the level of their understanding, and attitude toward physical geography concepts, as well as improving their skills of observation, recording, analyzing and reporting of phenomena occurring on the surface of the earth which is in line with philosophical background of constructivist who emphasized observation as a basis for securing a scientific knowledge.
3. **Stakeholders in education** such as State and Federal Ministries of Education will be aware of the effective methods thereby supporting schools to adopt them.
4. **Researchers** conducting similar studies in this area would hopefully utilize the outcome of this study in their literature review and choice of topic and problem of study.
5. **Professional bodies** like Science Teachers Association of Nigeria (STAN), Mathematics Association of Nigeria

(MAN) and Association of Nigerian Geographers (ANG) would benefit from the outcome of this research to improve the teaching and learning of science in schools through organizing seminars, workshops and conferences for teachers.

METHODOLOGY

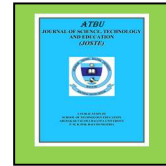
The research design employed for the study is quasi-experimental control group design of pre-test and post-test. Experimental group was exposed to experimental treatment using fieldtrip method while control group was taught using lecture method. This design was adopted from (Sambo 2008) who describes this design as one that offers numerous advantages. Both experimental and control groups were subjected to pre-test in order to determine their attitude level prior to administration of treatment. The population of this study consisted of all public Senior Secondary Schools SS II geography students in Dutsin-ma Education Zone. The total number of public Senior Secondary Schools is twenty one (21) with students' population of 3557 comprising of 2176 male and 1383 female. A total number of 201, SSII geography students from two public Senior Secondary Schools in Dutsin-ma Education Zone formed the sample of this study. Schools were randomly assigned to experimental and control prior to the administration of the treatment. Two intact classes, one for experimental and one for control group were used for the study. A random sampling by balloting was used in selecting the sample of the study. The

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choice of this sampling technique is to give each member in the population an equal chance to participate in the study and to be free from bias.

Physical Geography Concept Attitude Questionnaire (PGCAQ) of 20 items for measuring students' attitude on physical geography concepts was structured to have 5-point rating scale, questions that are in positive form has 5=SA, 4=A, 3=U, 2=D and 1=SD. While questions that are in negative form the responses has 1=SA, 2=A, 3=U, 4=D and 5=SD. Skewness and kurtosis were used for analyzing the mean scores of the groups. The computation involved the use of Statistical Package for Social Sciences.

The validity of this instrument was obtained by presenting the instrument to a panel of three experts with qualification of PhD in the Department of Science Education Ahmadu Bello University, Zaria. Experts in geography including supervisors and secondary school geography teachers with at least ten years teaching experience also validated the instrument. The validation of PGCAQ is to ensure that the instrument/questions test exactly the attitude of students or whether there is ambiguity in statement of the questions, and to give recommendations towards improvement of the instrument.

The reliability of Physical Geography Concept Attitude

Questionnaire (PGCAQ) was obtained by administering the instrument to 30 students of senior secondary school Wurma, which is part of the population but not among the sample, split half method of odd and even numbers was used to test the reliability of the scores of 30 students. The scores of the two halves were correlated using Spearman Rank Order Correlation, the reliability coefficient of the instrument was found to be 0.8.

Physical Geography Concept Attitude Questionnaire (PGCAQ) was administered to both experimental and control groups. Groups were assigned to experimental and control groups before giving the treatment. Two intact classes one experimental and one control group were used for the study. Both experimental and control groups were pretested on attitude before the treatment. The same instrument was used in pre-test and post-tests. Fifty minutes were given to respondents to fill in the questionnaires.

PRESENTATION OF RESULTS

Research Question 1: Sought to establish the extent of students' attitude in physical geography concept when taught using field trip and lecture methods. Skewness and Kurtosis of post attitude test of experimental and control group were compared in table 1.



Table 1: Skeweness and Kurtosis of Attitude of Experimental and Control Groups

Varies/ Group	N	Min.	Max.	Mean	Std. Dev	Skeweness		Kurtosis		
						Statistic	SE	Statistic	SE	
EG	58	37.00	84.00	60.0345	1.83	13.96608	-.040	.314	-1.138	.618
CG	68	35.00	86.00	58.5441	1.74	14.40401	.232	.291	-1.042	.574

Table 1 presented the Skeweness and Kurtosis of attitude of experimental and control groups. From the result, the skewness obtained in experimental group is -0.40 and standard error of 0.314 while Kurtosis is -1.138 and standard error of 0.618. While in control group, the skewness obtained is 0.232 and standard error of 0.291 while Kurtosis is -1.042 and standard error of 0.574.

Research Question 2: Sought to examine the difference in the mean attitude score of male and female students taught using field trip and those taught with lecture method. Mean and standard deviation of post attitude test of male and female students in experimental and control groups were presented in Table 2.

Table 2: Mean and Standard Deviation of Post-Test of Male and Female Students' Attitude.

Gender attitude		Mean	Std. Dev.	N
Experimental	Male	58.9487	13.22	39
	Female	62.2632	15.52	19
Control	Male	58.3571	15.16	42
	Female	58.8462	13.37	26

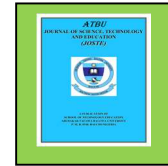
Table 2 presented the mean and standard deviation of post-test Attitude of male and female students in experimental and control groups. From the result obtained, male students in the experimental group recorded a mean of 58.95 and standard deviation of 13.22 and female students in the same group recorded a mean of 62.26 and standard deviation of 15.52, while male students in the control group recorded a mean of 58.35 and standard deviations of 15.16,

female students in the same group recorded a mean of 58.84 and standard deviations of 13.7. Female Students exposed to physical geography concept using field trip and lecture method developed positive attitude than their male counterparts.

Testing Null Hypothesis

The hypotheses formulated were tested at $P < 0.05$ level of significance.

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H01: There is no significant difference in the performance of students taught physical geography concept using field trips and those taught with lecture method.

H02: There is no significant difference in the attitude of students taught physical geography concepts using fieldtrips and those taught with lecture method.

Table 3: Kruskal Wallis of Post-Test Attitude of the Subject in Experimental and Control Groups.

Group	N	Mean Rank	H-Value	Df	Asymp. No. Sig.
experimental 1	58	111.91	5.279	2	0.071
control	68	105.76			
Total	202				

*Significant at $p \leq 0.05$

The result in Table 3 compared the change of attitude of students in experimental and control groups. The result shows that the Experimental Group and the control groups have mean rank values of 111.91 and 105.76 respectively. The Kruskal Wallis observed was 5.279 and the p-value observed was 0.071.

Since the p-value is greater than 0.05, there is no significant difference in the attitude of students. Therefore, the null hypothesis that states that there is no significant difference in the attitude of students taught physical geography concepts using fieldtrips and those taught with lecture method was retained.

Table 4: ANCOVA of Post-Test Attitude of Male and Female Students in Experimental and Control Groups

	Sum of Squares	Df	Mean Square F	Sig.	Partial Eta Squared
Contrast	2378.050	5	475.610	2.437	.036
Error	38059.769	195	195.178		.059

*Significant at $p \leq 0.05$

Table 4 presented the ANCOVA of significant difference in the Attitude of male and female students taught physical geography concepts with fieldtrips and those taught using lecture method. The f-value of 2.437 and p-value of 0.36 revealed no significant difference

between the two methods. Therefore hypothesis number two which states that there is no significant difference in the Attitude of Male and Female students taught physical geography concepts with fieldtrips and those taught using lecture method is retained.

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DISCUSSION OF RESULTS

Findings showed that there is no significant difference in attitude of students taught physical geography concept using fieldtrips and lecture methods. Poopola (2010) reported that student's positive attitude to science correlates highly with their science achievement. Akinbobola (2008) adds that many factors can influence a person's attitude, including past experience and social influences. Other factors that may influence attitude is the students' home background and peer influence. The effect of peer group on students attitude if not properly managed can change the student's predisposition to any subject, science inclusive.

The result showed that there is no significant difference in the Attitude of Male and Female students taught physical geography concepts with fieldtrips and those taught using lecture method. Contrary to the findings of Bell (1970) which showed that the aptitude score of boys after the experience were higher than score for girls. Student in both condition (experimental and control) were comparable in aptitude at the beginning of the experiment. Boys performed better than girls and AGO students scored higher on post-test performance than student in the control group.

CONCLUSION

Based on the findings from this study it is concluded that, Students exposed to physical geography concepts using fieldtrip and those taught with lecture method showed no significant

difference in their attitude. On the other hand male and female students exposed to physical geography concept using fieldtrip and lecture methods showed no significant difference in their attitude towards physical geography. Therefore, teaching students' physical geography concepts with field trip and lecture method have no influence on students' attitude.

RECOMMENDATIONS

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

1. The Federal and State Ministry of Education should encourage more research to find out factors responsible for students' negative attitude towards physical geography concepts at secondary schools.
2. Professional bodies such as Association of Nigerian Geographers (ANG) and Science Teachers Association of Nigeria (STAN) should organized workshops and seminars to train teachers on more innovative strategies that could improve students' positive attitude towards geography and other science subjects at Secondary School level.

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