Effects of Inquiry-based and Field-trip Instructional Strategies on Pupils Learning Outcomes in Basic Science in Ado-Ekiti, Ekiti State, Nigeria

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Abstract
The study compared the effects of inquiry-based and field-trip instructional strategies on primary school pupils' performance in basic science in Ekiti State, Nigeria. It examined the effect of the instructional strategies on the pupils' attitude to basic science in the study area and investigated the effect of the strategies on pupils' retention of basic science concepts. These were with a view to determining a better way of improving the performance, attitude and retention ability of pupils in basic science.The study employed pre-test post-test control group quasi experimental research design. The population consisted of all private primary school pupils in Ado-Ekiti, Ekiti State. The sample was made up of three intact primary III pupils. One Local Government Area (LGA) was selected from the State using simple random sampling technique; sixty (60) private primary three pupils from three (3) intact classes of 20 pupils from three primary schools which were purposively selected from the LGA using purposive sampling technique based on availability of laboratory and library facilities. Two experimental groups and one control group were adopted for the study. The experimental groups were taught using the inquiry-based and field-trip instructional strategies while the control group was taught using conventional method. Two instruments were used to elicit information from the respondents. Science Achievement Test (SAT) and Basic Science and Questionnaire on Pupils Attitude towards Basic Science (QPABS). The SAT was a 20-item test which tested the knowledge acquired by the pupils in basic science while the QPABS was a 10-item questionnaire which centered on pupils attitude towards basic science (QPABS). Four research hypotheses were formulated and tested. Data were analyzed using mean, standard deviation, t-test, analysis of covariance (ANCOVA), analysis of variance (ANOVA) and Post-hoc analysis.The results of the study showed that there was a significant effect of the field-trip and inquiry-based instructional strategies on pupils exposed performance in basic science (t= 3.634, p< 0.05). The results also showed that there was a significant difference in the attitude of pupils' towards basic science (t= 8.447, p<0.05). It also revealed that there was a significant difference in the retention ability of the pupils exposed to field-trip and inquiry-based instructional strategies (t= 24.145, p<0.05). The results further showed that there was a significant difference in the performance of pupils exposed to inquiry-based-based, field-trip and conventional methods of teaching (F= 13.149, df = (2, 57), p<0.05).The study concluded that field-trip instructional strategy positively improved the academic performance and retention ability of pupils in basic science. Also, inquiry-based and field-trip instructional strategies improved pupils' attitude towards basic science.
Keywords: Inquiry-based instructional strategy, Field-trip instructional strategy, learning outcomes, conventional methods of teaching.

1.1 Introduction

Science is the knowledge about the physical and natural world based on facts which can be proven experimentally and its one of the subjects studied at primary schools in Nigeria. According to National Policy on Education (NPE, 2013), Early childhood/pre-primary education is given in an educational institution to children prior to their entering into such institution. Also, science is one of the subjects taught at the Nursery/Primary School. The purpose of early childhood/pre-primary education is to inculcate in the child "the spirit of inquiry-based and creativity through the exploration of nature, the environment, art, music, playing with toys, etc. Science teaching and learning at all levels does not mainly require direct teaching. Rather, it requires a lot of practice and since children at this level (early childhood) are naturally active, self motivated, they learn best from personal hands-on experience. As observed in the conventional classroom when science is taught mainly as a body of knowledge which requires facts and formula, children are made to memorize facts and if there is lack of active participation in the learning of scientific skills learners may end up finding science learning burdensome and boring. Children therefore need to construct the understanding of their worlds through hands-on exploration activities. Science should therefore be presented to them in that way.

However, science teaching at the various levels in Nigeria still employs the old conservative approach, which involves the teacher, in most cases, acting as the repertoire of knowledge and the students the dominant

recipient. According to Aladejana (2007) there is an over-reliance on textbooks and occasional demonstrations and experience in most science classroom. She also posited that in an average classroom, one finds a teacher at the chalkboard jotting down important facts, students furiously copy all that is written and said and are expected to memorize the facts and spit them out on an examination. Regrettably, most Nigerian secondary schools students show little interest in science education, because most of them fail science subjects and some others perceive science education to be difficult (Owokade, 2006). Science education is the means to an end, the end which is technology.

According to Ogunsanwo (2004), this menace is also found in the science classroom in the Nigeria's primary schools. Primary science is not so complex and neither an activity that occurs separately from the normal classroom routine, almost all young children in all environments "do science" most of the time. They experience the world around them and develop theories about how that world works (Conezio and French, 2002).

Science teaching in Nigerian primary schools does not provoke learners' interest in science. Many early childhood teachers are hesitant about introducing science in their classrooms, often because of their own unpleasant science education experiences. When asked if they teach science, these educators might point to the plants drawn on the chalkboard, stones and different types of sand gathered from outside the classroom and kept in the nature corner if there is any at all (Ogunsanwo, 2004).

Inquiry-based method is a process through which pupils find facts or knowledge through the understanding of concepts. These methods avail the pupils the opportunities to discover truths, new rules and new method of tracking problems as well as new values for themselves. Moreover, the use of inquiry-based method for science learning is important not because they are "fun" but because they are immersive, require the learner to make frequent, important decisions, having clear goals, explorative, adaptable for the teaching of individual. Inquiry-based method has many attributes that are associated with how people learn such as social research, problem-solving, transfer and experimental (Oblinger, 2006).

Field-trip is any learning activity that is carried out by a group of learners with the teachers outside the classroom. Outdoor experiences and observation are essential part of a learner's education. It involves journey with the pupils to observe and investigate situations outside the classroom. Though field-trip makes lasting impression upon the pupils, it involves a lot of efforts, energy and time on the part of the teacher and the learners. Inquiry-based method and field-trip strategies are assumed to possess these qualities because they are activity-based. Science is better learned when teaching is activity based (Oblinger, 2006). Ogunsanwo (2004) explains that activity-based teaching makes learning science very interesting and more explicit. Learning must be interesting to the children because they get bored easily, they are inquisitive, learn easily when activities keep them involved and give them a chance to interact with peer group and involve in group activity. Nonetheless, while field-trip strategies have been widely used, inquiry-based method has not been used in that way. But with the advancement in technology across the world, there is the need for improved teaching methods which could make science learning more fascinating, in order to be able to meet up with challenges ahead. Therefore, children should be encouraged to learn science in a more interactive way. If inquiry-based method and field-trip strategies are employed, these could make science teaching and learning possibly more activity based.

1.2 Statement of Research Problem
The goal of education should be to develop educational experiences that facilitate meaningful learning and increase interest. However, studies have established that pupils' performance and interest in basic science is declining. It has been observed that learners interest in science dwindle as they move up in the academic pursuit to the extent that few pupils choose science oriented disciplines. This might be as a result of the strategies used in the teaching-learning process among others. Evidence has shown that inquiry-based and field-trip instructional strategies have been used effectively in improving learning outcomes of secondary school students but there is no clear evidence of the effects on basic science at the primary school level, hence this study.

1.3 Purpose of the study
The general objective of this study is to investigate the effects of inquiry-based and field-trip instructional strategies on pupils learning outcomes in basic science in Ado-Ekiti, Ekiti State, Nigeria. Therefore the specific objectives of this are to
(a)   compare the effect of inquiry-based and field-trip instructional strategies on pupils' performance in basic science in Ekiti State.
(b)   examine the effect of the instructional strategies on the pupils' attitude to basic science in the study area and;
(c)   investigate the effect of the strategies on pupils' retention of basic science concepts.

1.4 Hypotheses
The following research hypotheses were generated for the purpose of this study:

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(i)   There is no significant difference in the performance of pupils exposed to inquiry-based and field-trip instructional strategies.

(ii) There is no significant difference in the effect of the two instructional strategies on pupils' attitude to basic science.

(iii) There is no significant difference in the significant in the effect of the two strategies on pupils retentions of basic science concepts

(iv) There is no significant difference in the performance of pupils exposed to inquiry-based and field-trip instructional strategies and those taught conventional method in basic science.

1.5 Scope of the study

The study is limited to three private primary schools in Ado-Ekiti Local Government Area in Ekiti State. Three schools and sixty primary pupils will be purposively selected. The study is conducted on the comparative effectiveness of inquiry-based method and field-trip instructional strategies in teaching basic science. The selected topics are water, sources of water and its uses, evaporation and condensation. This study is also restricted to all primary three basic science pupils in three selected private primary in Ado-Ekiti Local Government Area of Ekiti State, Nigeria as the topic chosen for the study exists only in the primary three curriculum. Also, in that the study relates to the early childhood education, it behooves the study to consider primary three as it is the most matured class to be considered for the study as other higher primary classes are no longer part of the early childhood group. Meanwhile, since pupils to be considered in early childhood are pupils limited to eight years old, the class under study is suitable for the age bracket.

1.6 Methodology

This discussed the research design, population, sample and sampling technique, validity and reliability of instruments, procedure for data collection and method of data analysis.

1.6.1 Research design

The study adopted pretest-posttest control quasi experimental research design. It is a non equivalent control group quasi-experimental design because intact classes were used for different experimental treatments and control group.

The design for the study is as represented below:

$$0_1 \qquad X_1 \qquad X_2 \qquad 0_3$$
$$0_4 \qquad X_2 \qquad 0_5 \qquad 0_6$$

0_1 and 0_4 represent pretest in the two groups while X_1 and X_2 represent treatment 2 (field-trip).

$0_{2x} 0_5$ also represent the post test for the three groups and 0_3 and 0_6 represent retention test.

Dependent Variable: The dependent variable in this study is the achievement test. Three tests were used.

(a)   One test measures entry behavior on the topic chosen

(b)   The 2nd test measure students' achievement at the conclusion of the study.

(c)   The third will measure the retention level of the pupils.

1.6.2 Population of the study

The population for the study consisted of all private primary school pupils in Ado-Ekiti, Ekiti State. The total number of primary three pupils in Ado-Ekiti for private schools was 5832 while the total number for public schools was 3291 as collected from State Universal Basic Education Board (SUBEB), Ado-Ekiti and Area Education Office, Ado-Ekiti, Ekiti State.

1.6.3 Sample and Sampling Techniques

A total number of 60 primary three pupils were selected purposively from three private schools in Ado-Ekiti township because of class size and availability of facilities such as useful laboratory and library. One Local Government Area was selected from the State using the simple random sampling technique. Meanwhile, three private primary schools were selected from the Local Government Area using the purposive sampling technique. Two experimental and one control group was used for the study. Intact class of 20 each were used for the experimental group A, experimental group B and the control group.

1.6.4 Research Instruments

The research instruments used in collecting data for the study are:

A self-designed questionnaire titled 'Questionnaire on Pupils' Attitude towards Basic Science (QPABS). The 10-item questionnaire was administered on 60 pupils in three selected primary schools in Ado-Ekiti, Ekiti State. The questionnaire was centered on attitude of the pupils towards basic science. The questionnaire was administered to the pupils by the researchers through the assistance of their teachers. The Section A of the questionnaire elicited the demographic data of pupils while Section B of the research instrument elicited responses from pupils to affirm captioned 'true' or to disagree captioned 'false' to the questions on the central topic of the research which is to inquire into the effects of inquiry-based and field-trip instructional strategies on pupils learning outcomes in basic science.

Science Achievement Test (SAT) is a test which contain 20-multiple choice items based on four different topics selected from past questions of one of the schools selected. The topics are water, source of water and its uses, evaporation and condensation. Science Achievement Test (SAT) was used for the pretest and posttest. Supported with lesson notes for six weeks of treatment for 40 minutes per period which contain the instructional package in topics taught selected from primary curriculum of basic science and technology. The experimental groups taught using the inquiry-based based and field-trip strategies while the control group taught using the conventional method.

Meanwhile, the field-trip was coordinated by the researcher and assisted by other teachers. The field-trip was embarked upon after permission was taken from the parents. Health personnel were taken along with the first-aid box to provide medical assistance in time of need. A bus was also chartered for this reason.

1.6.5 Validation of the Research Instrument

A table of specification usually referred to as the part of the text maker's blueprint is a table which sets off the objectives of the treatment unit against the content to be covered within the treatment. A table of specification was constructed for the Science Achievement Test (SAT). The aim of the table was to ensure validity of the instrument. The complete test was given to experienced basic science teachers and experts in the area who are seasoned common entrance (primary school external examinations) examiners for comments on the validity of the correctness of the questions and options. Their corrections and suggestions were incorporated into the final draft and upgraded for final approval.

1.6.6 Reliability of the Research Instrument

The corrected instruments were pilot-tested on twenty pupils from an intact class of a co-educational secondary school outside the scope of the study. Test-retest method was used to generate two set of scores for the students. The scores were subjected to Pearson Moment Correlation Analysis so as to determine the reliability of the instruments. The correlation coefficient yielded 0.71 and 0.79 for SAT and QPABS respectively. These correlation coefficients showed that the instruments are reliable.

1.6.7 Method of Data Analysis

The data collection from the respondents were sorted, coded and analyzed using descriptive statistics and ANOVA while data collection from the SAT were analyzed using mean (X), Standard Deviation (SD), t-test, ANCOVA and Scheffe Post-Hoc of multiple comparisons

The t-test was used to test hypotheses first-third (1-3), Scheffe Post-Hoc of Multiple Comparisons were used to test Hypotheses 4 to answer the questionnaire.

The hypotheses formulated were tested at 0.05 level of significance. The decision rule was based on the probability valve (p). If p value is less than or equal 0.05, the null hypotheses were rejected but if p value is greater than 0.05 the null hypotheses were accepted.

1.7 Results

1.7.1 Testing of Hypotheses

Research Hypothesis One: There is no significant difference in the performance of pupils exposed to inquiry-based method of teaching and those exposed to field-trip strategy in basic science.

To test this hypothesis, the post test scores of the pupils in the two groups in Basic science was subjected to t-test analysis and the result is presented in Table 1.

Table 1: t-test analysis of the performance in post test scores in basic science between pupils exposed to field-Trip and inquiry-based teaching strategies.

Strategies	N	Mean ($\bar{x}$)	Standard Deviation (SD)	Df	T	P-Value	Remarks
Field- Trip	20	22.35	3.19	38	3.634	0.01 p<0.05	Significant
Inquiry-based Method	20	16.65	6.24				

(t = 3.634, p<0.05)

The result of the t-test in Table 1 shows statistically that there is significant difference in the performance of pupils exposed to field-trip and inquiry-based teaching strategies since p-value is less than 0.05. Therefore, the null hypothesis is hereby rejected and can be restated that the difference in the performance of pupils exposed to inquiry-based method of teaching and those exposed to field-trip strategies in basic science is significant. The result implies that both strategies are effective for improving pupils' performance in basic science; but with pupils exposed to field-trip strategy showing better performance than those exposed to inquiry-based method. This is revealed in field-trip strategy having a higher mean score of ($\bar{x} = 22.35$).

Research Hypothesis Two: There is no significant difference in the effect of inquiry-based and field-trip strategies on the pupils' attitude to basic science.

To test this hypothesis, attitudinal scores of the pupils in the two groups was subjected to descriptive statistics and analysis of covariance (ANCOVA) and the results were presented in Table 2a and Table 2b respectively.

Table 2a: Descriptive statistics of the effect of inquiry-based and field-trip strategies on the pupils' attitude to basic science.

Descriptive Statistics			
Dependent Variable: Attitude			
Strategies	Mean	Std. Deviation	N
Field-trip	26.85	3.42	20
Inquiry-based Method	23.35	4.16	20
Total	25.10	4.16	40

The table above revealed a higher attitudinal mean score of ($\bar{x} = 26.85$) for the pupils exposed to field-trip strategy over those pupils exposed to inquiry-based based method that has an attitudinal mean score of ($\bar{x} = 23.35$). The table does not show the significant difference in the effect of inquiry-based and field-trip strategies on the pupils' attitude towards basic science which was provided in Table 2b using Analysis of Covariance (ANCOVA).

Table 2b: Analysis of Covariance (ANCOVA) of the effect of inquiry-based and field-trip strategies on the pupils' attitude towards basic science.

Tests of Between-Subjects Effects						
Dependent Variable: Attitude						
Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	122.500[a]	1	122.500	8.447	.006	.182
Intercept	25200.400	1	25200.400	1737.643	.000	.979
Strategies	122.500	1	122.500	8.447	.006	.182
Error	551.100	38	14.503			
Total	25874.000	40				
Corrected Total	673.600	39				
a. R Squared = .182 (Adjusted R Squared = .160)						

The attitude of the pupils for inquiry-based and field-trip strategies were subjected to analysis of covariance and the attitudinal scores for the two groups were compared. The result ($F_{(1,39)}=8.447$, $p<0.05$) shows that there significant difference in the effect of inquiry-based and field- trip strategies on the pupils' attitude towards basic science, thus the null hypothesis is rejected. A partial eta squared value of 0.182 showed that 18.2% of the variance in the attitudinal score of the pupils is accounted for by the strategies. However, field-trip strategy have higher effect on the pupils' attitude towards basic science considering its attitudinal mean score of ($\bar{x} = 26.85$) in Table 2a.

Research Hypothesis Three: There is no significant difference in the effects of the two instructional strategies on pupils' retention of basic science concepts.

To test this hypothesis, the post test and retention scores of the pupils in the two groups were subjected to descriptive statistics and analysis of covariance (ANCOVA) and the results were presented in Table 3a and Table 3b respectively.

Table 3a: Descriptive statistics of the effect of inquiry-based and field-trip strategies on the pupils' retention in basic science.

Descriptive Statistics			
Dependent Variable: Retention			
Strategies	Mean	Std. Deviation	N
Field-trip	23.55	3.09	20
Inquiry-based Method	18.70	2.49	20
Total	21.13	3.70	40

The table above revealed a higher retention ability mean score of ($\bar{x} = 23.55$) for the pupils exposed to field-trip strategy over those pupils exposed to inquiry-based based method that has a retention ability mean score of ($\bar{x} = 18.70$). The table does not show the significant difference in the effect of inquiry-based and field-trip strategies on the pupils' retention ability in basic science which was provided in Table 3b using Analysis of Covariance (ANCOVA).

Table 3b: Analysis of Covariance (ANCOVA) of the effect of inquiry-based and field-trip strategies on the pupils' retention ability in basic science.

Tests of Between-Subjects Effects						
Dependent Variable: Retention						
Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	237.198[a]	2	118.599	14.766	.000	.444
Intercept	1123.408	1	1123.408	139.870	.000	.791
Post test	1.973	1	1.973	.246	.623	.007
Strategies	193.926	1	193.926	24.145	.000	.395
Error	297.177	37	8.032			
Total	18385.000	40				
Corrected Total	534.375	39				
a. R Squared = .444 (Adjusted R Squared = .414)						

The result ($F_{(2,39)}$=24.145, p<0.05) in the Table 3b shows that statistically there is a perfect significant difference in the effect of inquiry-based and field-trip strategies on pupils' retention ability in basic science. Therefore the null hypothesis that states that there is no significant difference in the effect of the two instructional strategies on pupils' retention of basic science concepts is hereby rejected. A partial eta squared value of 0.395 showed that 39.5% of the variance in the retention score of the pupils is accounted for by the strategies. However, field-trip strategy have higher effect on the pupils' retention in basic science considering its retention ability mean score of ($\bar{x} = 23.55$) in Table 3a.

Research Hypothesis Four: There is no significant difference in the performance of pupils exposed to inquiry-based-based, field-trip instructional strategies and those taught with conventional method in basic science.

To test this hypothesis, the post scores of the pupils exposed to inquiry-based-based, field-trip instructional strategies and those taught with conventional method were subjected to descriptive statistics, analysis of variance (ANOVA) and post-hoc analysis using Scheffe and the were presented in Table 4a, Table 4b and Table 4c respectively.

Table 4a: Descriptive statistics of the performance of the pupils exposed to inquiry-based, field-trip instructional strategies and those taught with conventional method.

Strategies	N	Mean	Standard Deviation
Field-trip	20	22.35	3.19
Inquiry-based Method	20	16.65	6.24
Conventional Method	20	16.40	1.57
Total	60	18.47	4.93

The data presented in Table 4.4a shows the mean scores of the pupils' performance in post test scores in field-trip, inquiry-based instructional strategies and conventional method in basic science as 22.35, 16.65 and 16.40 respectively. However, the pupils performed very well having been exposed to field-trip strategy since they recorded the highest mean score. But the table does not show the significant difference values for the effectiveness of the three strategies on pupils' performance in basic science using field-trip, inquiry-based and conventional strategies. Further analysis of One-Way Analysis of Variance (ANOVA) of the academic performance of the pupils exposed to the three teaching strategies was carried out and the result is as presented in Table 4.4b.

Table 4b: One-Way Analysis of Variance (ANOVA) of the performance of pupils exposed to the three strategies in basic science.

One-Way ANOVA					
Post-Test					
	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	453.033	2	226.517	13.149	.000
Within Groups	981.900	57	17.226		
Total	1434.933	59			

(F = 13.149, df = (2,57), p<0.05).

Table 4b revealed that statistically there is a perfect significant difference in the academic performance of the pupils exposed to field-trip and inquiry-based strategies and conventional method in basic science. This result implies that the null hypothesis four is hereby rejected meaning that the hypothesis can be restated that the difference in the performance of pupils exposed to inquiry-based, field-trip instructional strategies and those taught with conventional method is significant. Considering the academic performance mean scores in Table 4a, it can be deduced that field-trip strategy is good at improving the teaching of pupils in basic science.

Table 4c: Post Hoc Analysis of the pupils' academic performance subjected to the three groups using Scheffe of Multiple Comparisons.

Multiple Comparisons			
Dependent Variable: Post-Test Scheffe			
(I) Strategies	(J) Strategies	Mean Difference (I-J)	Sig.
Field-trip	Inquiry-based Method	5.70000[*]	.000
	Conventional Method	5.95000[*]	.000
Inquiry-based Method	Field-trip	-5.70000[*]	.000
	Conventional Method	.25000	.982
Conventional Method	Field-trip	-5.95000[*]	.000
	Inquiry-based Method	-.25000	.982
*. The mean difference is significant at the 0.05 level.			

As shown in Table 4.4c of Scheffe multiple comparisons of pupils' academic performance scores, it was crystal clear that participants exposed to field-trip strategy are significantly different from those exposed to participants in inquiry-based strategy (Mean Difference = 5.70000, p<0.05). Likewise the significant difference of pupils exposed to field-trip strategy and conventional method (Mean Difference = 5.95000, p<0.05) as well as conventional method and inquiry-based strategy (Mean Difference = 0.25000, p>0.05) which are not different in their performances in basic science.

1.8 Discussion of Findings

From the findings of the study, it was observed that the difference in the performance of pupils exposed to inquiry-based method of teaching and those exposed to field-trip strategy in basic science is significant which in line with the findings of Eshach (2007) who noted that children enjoy on scientific field-trips and that they are aware that they are expected to learn from the trip which is not only meant for fun day rather, a day where they enjoyably learn science that boosts their performances in basic science.

The result of the findings also showed that the effect of inquiry-based and field-trip strategies on the pupils' attitude to basic science is significant which corroborates the findings of Mao and Chang (1998) who discovered a significant relationship between inquiry-based method of teaching and student attitude towards Earth Science recommending that inquiry-based oriented instruction should be implemented in schools and Gormez (2014) who revealed that field-trip strategy spurs the attitude of students as regards learning and improves their academic performance.

The result of the study further revealed that the impact of inquiry-based and field-trip instructional strategies on the pupils' retention ability is significant. Field-trip makes lasting impression upon the students, though it involves a lot of efforts, energy and time on the part of the teacher and the learners. However, Obadiora (2016) noted that field-trip strategy helps students to retain knowledge better and Lamanna (2010) discovered a positively significant relationship between inquiry-based pedagogy and student retention ability.

The result finally indicated that the difference in the performance of pupils exposed to inquiry-based, field-trip instructional strategies and those taught with conventional method is significant which is in consonant with the findings of Ajitoni and Salako (2013) and Gormez (2014) who divulged that field-trip method spurs academic performance of students against the conventional method while Abdulkarim, Ababkr and Nada (2015) discovered that inquiry-based science teaching approach is a more suitable method than the conventional lecture method.

1.9 Summary

The study investigated the effect of inquiry-based and field-trip instructional strategies on pupils learning outcomes in basic science in Ado-Ekiti, Ekiti State, Nigeria. Specifically, the study compared the effect of inquiry-based and field-trip instructional strategies on pupils' performance in basic science. The study further examined the effect of the instructional strategies on the pupils' attitude to basic science concepts. The study finally investigated the effect of the strategies on pupils' retention ability of basic science concepts.

1.10 Conclusion

Result from the study revealed that the difference in the performance of pupils exposed to inquiry-based method of teaching and those exposed to field-trip strategy in Basic science is significant with pupils exposed to field-trip strategy having a better performance over inquiry-based method. Moreso, result of the findings showed that the effect of inquiry-based and field-trip strategies on the primary school pupils' attitude to Basic science is significant. Furthermore, the study also established that the impact of inquiry-based method and field-trip instructional strategies on the retention ability of pupils is significant. Finally, result of the findings indicated that

the difference in the performance of pupils exposed to inquiry-based, field-trip instructional strategies and those taught with conventional method is significant.

1.11 Limitation of the study
The study was limited to three private primary schools in Ado-Ekiti Local Government Area in Ekiti State due to time and financial constraints. The researcher also encountered setbacks bedeviling the study such as the non-concentration of pupils during the field-trip and in class and their adamant attitude when they were assisted in filling the questionnaires. Furthermore, in a bid to correctly fill the questionnaire, it had to be read to the pupils painstakingly to elicit responses from them after which the teachers had to fill the options picked by the students on the questionnaire. This wasted lots of time during the research process. Also, getting schools to cooperate with the researcher in making available pupils of their school for the research exercise was a herculean task. Those pupils are however essential to the research project.

Moreso, the proprietors of the schools involved in the research exercise expressed fear about the safety and all other health hazards on the part of the pupils of their schools that were taken on field-trip. Meanwhile, the time allocated by the owners of the schools to the part of the field-trip was very short. Also, the research resources was highly stretched due to the scheduling of the participation of the pupils involved in the research exercise as parents were reluctant to bear the cost of the field-trip which made the financial burden fall on the researcher. However, irrespective of these constraints, the objective of this research project will not be jeopardized.

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APPENDIX I

QPABS- Questionnaire on Pupils' Attitude towards Basic science

Name of School:

Name of Pupil:

Local Government Area:

Class:

S/N	ITEMS	TRUE	FALSE
1.	I am happy when it is time for basic science.		
2.	I am interested in basic science than other subjects.		
3.	I enjoy the teaching of my teacher when it is time for basic science.		
4.	Basic science lessons are easier and understandable to me.		
5.	My school has a laboratory and library.		
6.	I do not understand basic science when my teacher teaches me.		
7.	Making use of materials when my teacher teaches arouses my interest in basic science.		
8.	Taking us to different places when it is time for basic science arouses my interest in science.		
9.	I like basic science because I discover new things any time we have the subject.		
10.	Basic science allows me to understand my environment.		