



Influence of Field Trip on Academic Performance and Interest of Students in Chemistry in Senior Secondary Schools in Enugu State

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Abstract

This research examined the influence of field trip on the academic performance and interest of senior secondary school students in chemistry in Enugu State. The research design used was the descriptive survey. The study was guided by three purposes, three research questions, with the corresponding null hypotheses. The sample of the study was three Hundred (300) senior secondary school students in class 2 (SS2) drawn from schools in the area of the study. The instrument for data collection was a structured questionnaire. It was validated by three experts. The reliability of the instrument was determined using the Cronbach's alpha reliability estimate with an overall index of 0.89. The data collected was analyzed using the mean and standard deviation to answer the research questions while the hypotheses were tested using the one sample t-test. The study revealed among other things that field trip method improves students' academic performance and interest in chemistry. The study found also that lack of means of transportation, insecurity, among others are the factors that hinder effective field trip implementation in secondary schools. Based on the findings, the study recommended among other things that school authorities should plan academic activities with adequate time allocation for application of field trips in teaching and learning of chemistry.

Keywords: Academic performance, Chemistry teaching, Field trip, Secondary school, Science education, Students' Interest.

Introduction

Science as a branch of knowledge is the systematic study of things around us. The totality of knowledge obtained from such studies constitutes scientific knowledge (Anaso, 2007). Science from its linguistic origin is derived from the Latin word "Scientia" which means "knowledge" (Eneh 2000). In addition science deals with nature, by observing it and later to experimental investigation (Anaso, 2007; Kalu 2007).

In science education, students are exposed to several methods/strategies of teaching and learning of science. These include lecture method, demonstration, discovery, discussion, laboratory activities, co-operative learning etc., depending on the aspect one wants to teach. Usman (2008), defines science as consisting of specific branch of a general body of knowledge such as Chemistry, Physics, Biology, Geology or Astronomy to mention but a few.

Chemistry as a branch of the general body of knowledge (science), has been defined by different scientists according to perception and understanding of the subjects. Thus, Chemistry is a

science that deals with the composition, structure, and properties of nature and with the transformations that they undergo (Usman, 2008). However, for effective chemistry teaching, the use of method/strategy which would make use of the environment to achieve much and bring home the actual meaning of the concepts are encouraged/emphasized. Among the science subjects, Chemistry is the most popular (Ibrahim 2008). Also, the basic knowledge of Chemistry is a prerequisite for studying a number of disciplines such as medicine, agriculture, pharmacy, biochemistry and psychology among others (Bichi, 2013, Kalu & Ndukwo, 2016). So, the use of strategies that will help the students to be grounded in chemistry concepts should be encouraged. Chemistry plays a vital role in the economic development of a nation. This is because according to Ajaja (2010), the recent advances recorded in the field of biochemistry, physiology, genetics and molecular chemistry, have made the subject a central focus in most human activities including solutions to the problem of food scarcity, pollution,

population explosion, radiation, disease, health, hygiene, family life, poverty eradication, management and conservation of natural resources as well as biotechnology and ethics.

Meanwhile, the quest to satisfy the basic needs of man like clothing, shelter, and food led to the development of chemistry. According to Udogu (2010) chemistry as one of the major branches of science, deals with composition, properties and uses of matter. Onwuachu (2011) stated that chemistry is a catalyst for sustainable national development. Onwuachu further explained that the influence of fertilizers, preservatives, detergents, paints, synthetic clothing and polymers has been so far reaching, that it is not easy to visualize modern life without the products of the endeavors of practicing chemists and chemical technologies. According to Ezeliorah (2009), the power of chemistry is what creates, as a whole, an enabling infrastructure that delivers food, medicine and materials which are hall-mark of modern life. This is why chemistry has been referred to, by Ibole (2009), as the oracle of modern science, based on observation and experimentation. Chemistry is the science that systematically studies compositions, properties and uses of organic and inorganic substances and various elementary forms of matter (Nnoli, 2016). The study of chemistry enables the scientists to discover the compositions, properties, structure and usefulness of matter and how they can apply such knowledge in handling their daily lives arising situations. It is through the study of chemistry that the manufacturers produce essential materials such as drugs, soaps, assorted brands of wine, papers, clothes, creams which are useful to man (Aboh, 2014). Chemistry is not just limited to a concept being studied in school, but a concept that is also practiced in our day to day lives, in and outside school. Some of the home chemical practices include the process of heating (cooking or boiling) of our food, the process of washing our clothes with soap and detergents, adding salt to perishable food stuff to preserve them, the process of preparation of pap from grinded maize, the process of adding potash (Akanwu), when cooking beans/cowpea beans (fiofio) to soften them easily, preparation of our African delicacy (fufu) through cassava, the use of palm fruit ashes (ngu) or burnt plantain peels to produce soap locally (local soap), addition of aluminum sulfate (alum) to purify drinking water, etc. Virtually all the cooking Practices in the local villages are based on chemical phenomenon. Chemistry as a science needs to be carefully taught by linking chemistry concepts to

student's daily life home practices (Ibole, 2009; Aboh, 2014; Nnoli, 2016).

According to Onwuba (2012) the objectives of teaching chemistry includes to provide a broad foundation in chemistry that stresses scientific reasoning and analytical problem solving with a molecular perspective; provide students with the skills required to succeed in graduate school, the chemical industry or professional school; and expose the students to a breadth of experimental techniques using modern instrumentation.

Teaching method is the main factor necessary for impacting knowledge to the students. A number of methods have been tested and agreed upon by educators as good. None of the methods is however, perfect and effective for all situations but each of the methods or a combination of them can be used at any particular time to influence the subject matter (Onwuba, 2012). In the past, few methods were used in impacting knowledge into the students which sometimes make them bored. Callahur (2016) noted that the method by which the teacher presents his/her materials to the learners and engage them in the task at hand is very important. Methodology is very vital in every teaching and learning situation. This is because, for effective teaching and learning to take place, the skilful teacher needs to use the many different methods and techniques at his command. Even though there is a great diversity in teaching methods and techniques, there is no one of them that can be regarded as the best for every teaching situation. (Onwuka 2009).

A carefully designed teaching method can work wonders in making learning more effective. The success in the use of the method depends on intelligent analysis of the educational purposes, the students in the class, the curriculum, and content of the moment or the type of subject matter being taught (Brown, 2010).

According to Mark (2012), there are some methods considered more essential in impacting knowledge on the students. Such methods are as follows: Discussion method, discovery method, play method, dramatization method, storytelling method, demonstration method, lecture method and field trip method. This research therefore, tends to investigate the influence of field trip on academic performance of senior secondary school students (SSS) in chemistry in Enugu State.

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 (Obika 2010). Obika added that field trip may be referred to as trips to various places to obtain information directly

by seeing things as they really are. Field trips can connect school work with the world, making it tangible and memorable. A field trip stimulates questions and ideas at the beginning or end of a unit. Field trip also provides an experimental “text” for students to study and interrogate.

Accordingly, Greene, Bowen, and Brian (2015), view field trip as a teaching and learning exercise carried out by the teacher and students outside the classroom settings in order to have firsthand learning experiences in a subject matter. An educational field trip can be an integral part of the instructional program. Good field trips provide participants with firsthand experience related to the topic or concept being discussed in the program. They provide unique opportunities for learning that are not available within the four walls of a classroom. Field trips can be a memorable and positive experience for school children. Furthermore, Bitgood (2009) defines a field trip as a visit to an area outside of the normal classroom where children can try new things, have different experiences, and learn valuable life lessons. A field trip can be to countless locations where students can see new sights and have hands-on opportunities in a wide variety of experiences. A field trip may be to a location right around the corner or may require a bus ride to a different environment, and be able to try new things. A field trip can take place in places like game reserve, cave, forest, industry, hospitals, museum, etc.

Field trips provide an opportunity to involve students, parents, and the teachers in the instructional program. Students can select the place to be visited, developing questions to ask, writing reports or thank you letters after the trip, or evaluating the experiences (Kulas, 2015). Since parents must give their permission, a letter sent home with the permission from explaining purpose of the trip is a good way to arouse their curiosity and encourage them to ask the student or teacher about the trip. The parent guides their child(ren) in order to prevent them from any harm.

Field trips make students aware of learning activities in everyday life. For instance, visits to supermarkets or shopping malls are typical field experiences. Field trips are rich in educational possibilities as students learn from actual hands-on experiences, rather than by simply reading or hearing about something. Involvement in a real world experience makes learning more meaningful and memorable comparing to regular classroom instructional programs (Kulas, 2015). Field trips can add variety to the regular instructional program; they tend to be special and enjoyable learning

experiences, ones which develop positive attitudes in students toward related classroom activities. Field trips are rich in educational possibilities because students learn from actual firsthand experiences, rather than by simply reading or hearing about something. Field trips help the students appreciate the relevance and importance of what they learn in the classroom. For e.g. determining blood type is a skill, which can be learned in a school laboratory setting, but students may not learn the importance of this skill until they observe what goes on in a real hospital where life and death are (Greene, Bowen, & Brian, 2015; Kulas, 2015)

Students’ Academic Performance and Field Trip

Okoye and Ogechi (2013) define academic performance as a specific statement about what a student should be able to do as a result of instructions acquired. It is what a student has shown s/he can do in a certain subject or course. It can be determined by looking at the end of grade or end of course assessment. Brown (2014) sees academic performance as a specific statement about what a student had been able to do or achieve after been administered with one test or the other on areas of subject they had been taught. It is a good indicator of a student’s growth over time and it pin-points a student’s strength and weakness. Furthermore, Okegbile (2014) view academic performance as a pedagogical terminology used while determining learner’s success in formal education, which is measured through factors exerting influence essentially. Academic performance can be expressed in the form of good scores and prizes as a result of hard work and exceptional achievement in classroom test, assignment and examination (Robinson, 2011).

From the foregoing, academic performance can be described as the outcome of education, the extent to which a student, teacher or institution has achieved their educational goals. It shows how well they are doing in class. Sometimes it could mean how well they are doing and how close they are coming to achieving their goals. Academic performance and achievement is commonly measured by examinations or continuous assessment but there is no general agreement on how it is best tested. Meanwhile, to evaluate the effects of field activities on students’ learning, Kern and Carpenter (2010) conducted a study with two sections of a college laboratory course in earth science. One section involved primarily classroom activities using a laboratory manual, while field-oriented activities were employed in the other. Comparisons of the

performance of the two classes at the end of the term revealed almost identical levels of lower-order learning (recall), but higher-order skills were demonstrated to a greater degree by the field-oriented section, indicating an enhanced ability to apply the information acquired. In another study conducted by David (2016) on the comparative effect of different museum tours on children's attitudes and learning. The study involved 200 students in 6 tours of the Natural History Gallery of the British Provincial Museum in Victoria. The t-test was used to analyse the data collected after posttest. This study concluded that students of grades 5, 6, and 7 had significantly greater learning when they participated in a more structured tour. Furthermore, a study conducted by Aklugemidu (2014) on the use of excursion, showed that field trips stimulate students' interest in learning and allow for more retention of Knowledge. Similar study conducted by Urulor (2010) showed that a greater percentage of what is heard, seen and touched during field trip is remembered than what is merely heard.

Moreover, field trip as a teaching method provides students with firsthand experiences by allowing them to see and observe processes in natural life settings. The educational value of the field trip is the opportunity to discover and explore new information as well as to apply and organize previous knowledge by concrete examples (Onwubiko, 2008). In addition, Onwubiko noted that apart from serving to develop interest of students in learning as they can gather firsthand information regarding the topic being discussed in class, field trips help in developing good public relations. Furthermore, Fred (2015) emphasized that biological science trip has long been recognized as a teaching device since it presents the concept being studied in its natural environment. Field trip, if properly planned, can afford the students the opportunity to become actively engaged in observing, collecting, classifying, studying and manipulating objects. Meanwhile, Tete (2007) noted that field trip is one of the most enjoyable and exciting experience for students studying chemistry which has a lot to do with matter and the environment.

Unfortunately, in our schools today, field trips and appropriate teaching aids are not often being used in chemistry teaching, perhaps due to the level of insecurity, and even lack of ideas and skills on the part of some teachers. It is expected that if the problems associated with instructional strategies in teaching and learning of chemistry in the secondary schools are tackled, students' performance may

improve. This study therefore, examined the influence of field trip on academic performance of senior secondary school students in Chemistry in Enugu State. Specifically, the study tends to find out the extent to which the field trip method improves students' academic performance in chemistry in Enugu State; the extent to which field trip enhances students interest in chemistry in secondary schools in Enugu State; and the factors that militate against effective use of field trip in teaching and learning of chemistry.

To achieve the purpose of this study, the following research questions and corresponding hypotheses were stated.

Research questions

1. What is the influence of field trip on students' academic performance in chemistry in secondary schools in Enugu State?
2. What is the influence of field trip on students' interest in chemistry in secondary schools in Enugu State?
3. What factors militate against the use of field trip in the teaching of chemistry in secondary schools in Enugu State?

Hypotheses

- Ho1. There is no statistically significant influence of field trip on students' academic performance in chemistry in secondary schools in Enugu State.
- Ho2. There is no statistically significant influence of field trip on students' interest in chemistry in secondary schools in Enugu State.
- Ho3. There are no statistically significant factors that militate against effective implementation of field trip in the teaching of chemistry in secondary schools in Enugu State.

Method and Materials

This study adopted a descriptive survey research design. The study was carried out in Enugu Education Zone of Enugu State. The population of the study consists of 4,598 secondary school two (SS2) chemistry students in 31 secondary schools in Enugu Education Zone. Three hundred (300) secondary school students were sampled for the study, using a simple random sampling technique. The instrument used for data collection was a structured questionnaire. The questionnaire has a four-point response options of Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD). These scales were weighted 4, 3, 2, and 1. The structured questionnaire had two parts, A and

B; part A sought information on the bio-data of the respondents, while part B contained fifteen (15) items to determine the influence of field trip on students' performance and interest, and factors that militate against the use of field trip in chemistry teaching, arranged in three clusters. The instrument was face and content validated by experts in measurement and evaluation, and science education from Enugu State University of Science and Technology, Enugu. The reliability of the instrument was obtained through a pilot study conducted on 22 senior secondary school students in class two from Enugu South Local Government Area. The results of the pilot study was subjected to Cronbach's Alpha reliability statistics which gave an overall reliability index of 0.89, which shows that the instrument was reliable. Three hundred (300) copies of the instrument (questionnaire) were

administered to the sampled students in their respective schools, through the help of research assistants. The questionnaires were responded to and returned immediately. A total of 300 copies of the questionnaire were returned which gave a 100% return rate. The mean and standard deviation were used to answer the research questions, while the hypotheses were tested using the one sample t-test. The analyses were computed using the statistical package for the social sciences (SPSS) software. The decision rule was that any item with mean less than 2.5 was regarded as Disagreed (D), while any item with mean value greater than or equal to 2.5 was regarded as Agreed (A). For the hypothesis, the alpha level was set at $p < 0.05$. Therefore, if a p-value was less than 0.05, the null hypothesis was rejected, but if greater than or equal to 0.05, the null hypothesis was accepted.

Results

The results are presented in tables according to the research questions and hypotheses.

Research Question 1: What is the influence of field trip on students' academic performance in chemistry in secondary schools in Enugu State?

Table 1: Mean and Standard Deviation Scores of Respondents to the Influence of Field Trip on Students' Academic Performance in Chemistry

S/N	ITEMS	N	Mean	SD	Dec.
1	Field trip exposes me to new experiences that helps to broaden my horizons to learning.	300	3.07	0.15	A
2	My academic performance in chemistry improves when I am exposed to field trip.	300	2.90	0.14	A
3	Field trip helps me to understand the theoretical concepts in chemistry by making them concrete.	300	2.83	0.14	A
4	My retention ability in chemistry is enhanced when I am exposed to field trip.	300	3.07	0.15	A
5	Exposure to field trip helps me to concentrate more during chemistry lessons.	300	3.07	0.15	A
	Grand Mean and SD	300	2.84	0.15	A

N = Sample size; SD = Standard deviation; A = Agreed; Dec. = Decision

Table 1 shows the mean and standard deviation scores of students' responses to the influence of field trip on students' academic performance in chemistry in secondary schools in Enugu State. The table shows that the grand mean and standard deviation scores of the responses of the students were 2.84 and 0.15, respectively. The grand mean of the students' responses was above the mean benchmark of 2.5 set for the study. This implies that the students generally indicated that field trip influences students' academic performance in chemistry in secondary schools in Enugu State. Specifically, the result shows that field trip exposes students to new experiences that helps to broaden

their horizons to learning, students' academic performance in chemistry improves when they are exposed to field trip, field trip helps students to understand the theoretical concepts in chemistry by making them concrete, students' retention abilities in chemistry is enhanced when exposed to field trip, and exposure to field trip helps students to concentrate more during chemistry lessons in secondary schools in Enugu State. Furthermore, to ascertain the statistical significance or otherwise of the observed influence of field trip on students' academic performance in chemistry in secondary school, the result was subjected to inferential testing



of null hypothesis one (Ho1) using the one-sample t-test as shown below.

Ho1. There is no statistically significant influence of field trip on students' academic performance in chemistry in secondary schools in Enugu State.

Table 2: One-Sample t-test on Students' Responses to the Influence of Field Trip on the Academic Performance of Students in Chemistry

One-Sample Test						
Test Value = 0						
95% Confidence Interval						
	T	Df	P	Mean Difference	Lower	Upper
Impact of TCS on Performance	63.80	299	0.00	3.24	3.14	3.34

Table 2 contains the one-sample t-test conducted on the students' responses to test the null hypothesis 1. The table shows a t-value of 63.80 and a p-value of 0.00, $p < 0.05$ at 299 degrees of freedom. Therefore, null hypothesis one (Ho1), which states that there is no statistically significant influence of field trip on students' academic performance in chemistry in secondary schools in Enugu State, was rejected at a 0.05 alpha level. This shows that field trip influences students' academic performance in chemistry in secondary schools in Enugu State. This study has, therefore, confirmed that field trip

exposes students to new experiences that helps to broaden their horizons to learning, students' academic performance in chemistry improves when they are exposed to field trip, field trip helps students to understand the theoretical concepts in chemistry by making them concrete, students' retention abilities in chemistry is enhanced when exposed to field trip, and exposure to field trip helps students to concentrate more during chemistry lessons in secondary schools in Enugu State.

Research Question 2: What is the influence of field trip on students' interest in chemistry in secondary schools in Enugu State?

Table 3: Mean and Standard Deviation Scores of Respondents to the Influence of Field Trip on Students' Interest in Chemistry

S/N	ITEMS	N	Mean	SD	Dec.
6	Exposure to field trip helps me to see chemistry as a simple and interesting subject.	300	3.16	0.95	A
7	I enjoy studying chemistry because of field trip exposure.	300	3.20	0.97	A
8	Field trip helps me to participate actively during chemistry lessons.	300	3.24	1.01	A
9	Field trip makes chemistry relevant and motivates my interest to learn the subject.	300	3.20	0.97	A
10	My teacher's quality explanations during field trip helps to improve my interest in chemistry.	300	3.17	0.93	A
	Grand Mean and SD	300	3.19	0.90	A

Table 3 showcases the mean and standard deviation scores of students' responses to the influence of field trip on students' interest in chemistry in secondary schools in Enugu State. The table shows that the grand mean and standard deviation scores of the responses of the students were 3.19 and 0.90, respectively. The grand mean of the students' responses was above the mean benchmark of 2.5 set for the study. This implies that the students generally agreed that field trip influences students' interest in chemistry in secondary schools in Enugu State. Specifically, the result shows that exposure to

field trip helps students to see chemistry as a simple and interesting subject, students enjoy studying chemistry due to field trip exposure, field trip helps students to participate actively during chemistry lessons, field trip makes chemistry relevant and motivates students' interest to learn the subject, and teacher's quality explanation during field trip helps to improve students' interest in chemistry in secondary schools in Enugu State. Furthermore, to ascertain the statistical significance or otherwise of the observed influence of field trip on students' academic performance in chemistry in secondary

school, the result was subjected to inferential testing of null hypothesis two (Ho2) using the one-sample t-test as shown below.

Ho2. There is no statistically significant influence of field trip on students' interest in chemistry in secondary schools in Enugu State.

Table 4: One-Sample t-test on Students' Responses on the Influence of Field Trip on the Interest of Students in Chemistry

One-Sample Test						
Test Value = 0						
95% Confidence Interval of the Difference						
	T	df	P	Mean Difference	Lower	Upper
Impact of TCS on Performance	61.25	299	0.00	3.19	3.09	3.30

Table 4 shows the one-sample t-test conducted on the students' responses to test the null hypothesis 2. The table shows a t-value of 61.25 and a p-value of 0.00, $p < 0.05$ at 299 degrees of freedom. Therefore, null hypothesis two (Ho2), which states that there is no statistically significant influence of field trip on students' interest in chemistry in secondary schools in Enugu State, was rejected at a 0.05 alpha level. This shows that field trip influences students' interest in chemistry in secondary schools in Enugu State. This study has, therefore, confirmed that

exposure to field trip helps students to see chemistry as a simple and interesting subject, students enjoy studying chemistry due to field trip exposure, field trip helps students to participate actively during chemistry lessons, field trip makes chemistry relevant and motivates students' interest to learn the subject, and teacher's quality explanation during field trip helps to improve students' interest in chemistry in secondary schools in Enugu State.

Researches Question 3: What factors militate against the use of field trip in the teaching of chemistry in secondary schools in Enugu State?

Table 5: Mean and Standard Deviation Scores of Respondents on the Factors that Militate Against the Use of Field Trip in the Teaching of Chemistry

S/N	ITEMS	N	Mean	SD	Dec.
11	Lack of funds affects the use of field trip in teaching chemistry.	300	3.22	0.91	A
12	Lack of transportation or means of transport may hinder the effective use of field trip.	300	3.20	0.87	A
13	Parents/guardians interference may prevent students from embarking on field trip due to fear.	300	2.76	1.07	A
14	The terrain/nature of the site to visit can hinder the use of field trip	300	3.16	0.95	A
15	Insecurity can affect the use of field trip in teaching chemistry.	300	3.22	0.91	A
	Grand Mean and SD	300	3.11	0.91	A

Table 5 shows the mean and standard deviation scores of respondents on the factors that militate against the use of field trip in the teaching of chemistry in secondary schools in Enugu State. The table shows that the grand mean and standard deviation scores of the respondents were 3.11 and 0.91, respectively. The grand mean of the respondents was above the mean benchmark of 2.5 set for the study. This implies that the students generally indicated that all the items were factors

that militate against the use of field trip in the teaching of chemistry in secondary schools in Enugu State. Specifically, the result shows that lack of funds affects the use of field trip in teaching chemistry, lack of transportation or means of transportation may hinder the effective use of field trip, parents/guardians interference may prevent students from embarking on field trip due to fear, the terrain/nature of the site to visit can hinder the use of field trip, and insecurity can affect the use of

field trip in teaching chemistry in secondary schools in Enugu State. Furthermore, to ascertain the statistical significance or otherwise of the

observed factors, the result was subjected to inferential testing of null hypothesis three (Ho3) using the one-sample t-test as shown below.

Ho3. There are no statistically significant factors that militate against effective implementation of field trip in the teaching of chemistry in secondary schools in Enugu State.

Table 6: One-Sample t-test on Students’ Responses to the Factors that Militate Against the Use of Field Trip in Teaching Chemistry

One-Sample Test						
	T	df	P	Test Value = 0		
				Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Impact of TCS on Performance	59.50	299	0.00	3.11	3.01	3.21

Table 6 contains the one-sample t-test conducted on the students’ responses to test the null hypothesis 3. The table shows a t-value of 59.50 and a p-value of 0.00, $p < 0.05$ at 299 degrees of freedom. Therefore, null hypothesis three (Ho3), which states that there are no statistically significant factors that militate against the use of field trip in the teaching of chemistry in secondary schools in Enugu State, was rejected at a 0.05 alpha level. This shows that those factors militate against the use of field trip in the teaching of chemistry in secondary schools in Enugu State. This study has, therefore, confirmed that lack of funds affects the use of field trip in teaching chemistry, lack of transportation or means of transportation may hinder the effective use of field trip, parents/guardians interference may prevent students from embarking on field trip due to fear, the terrain/nature of the site to visit can hinder the use of field trip, and insecurity can affect the use of field trip in teaching chemistry in secondary schools in Enugu State.

Discussion of the Findings

The study found that field trip helps to improves students’ academic performance in chemistry. This is in line with Fred (2015), who stated that field trip has long been recognized as a teaching device since it presents the concept being studied in its natural environment. In addition, Umeh (2014) agreed with the findings and reported that field trip exposes the students to practical environment that enables them understand most theoretical concepts in science subjects. Also, Kay (2010), noted that field trip is a relevant teaching approach for teaching Chemistry, because it enables the students to acquire new knowledge and experience in chemistry.

The study also found that field trip enhances students’ interest in chemistry in secondary schools. This finding is in consistent with the findings of Aklugemidu (2014), who noted that the use of

excursion as a teaching and learning method stimulate student’s interest in learning and helps the students’ retention of knowledge. In addition, Turton (2007), and Urulor, (2010) supported further by reporting that a greater percentage of what is heard, see and touched during field trip is remembered than what is merely heard and if properly planned, field trip affords the students the opportunity to become actively engaged in observing, collecting, classifying, studying relationships and manipulating objects. Furthermore, Kristen (2007), and Aliyu (2010), also added that in excursion, the students and teachers observe people, machines, equipment, and materials in industries, companies, and offices to see for themselves those things they have been taught and learned theoretically.

Finally, the study further found that some factors militate against the use of field trip in the teaching of chemistry in secondary schools in Enugu State. This finding agrees with the views of Okwo and Tawtiyas (2010), who noted that one of the factors that affect educational system in Nigeria is poor funding which hinders the availability of adequate instructional materials for effective teaching and learning. They added that money is require to enable instructors provide the students with the necessary learning environment that exposes them to real life situations that enable them learn certain concepts through what they can visualize in an environment thereby making them develop good retentive memory, access certain tools and learn other practical things in chemistry. Supporting the finding further, Eneh (2010), and Umeh (2014), noted that the extent of time availability for teaching and learning of science and other science related subjects determine the level of teachers' and students' achievement hence, availability of time enables science teacher to employ different teaching methods such as excursion, for effective

exposure of the students to practical learning environment. This would enable the students to ask more questions for deeper understanding of concepts and theories, and for easy engagement in practical activities

Conclusion

The study investigated the influence of field trip on academic performance of senior secondary school students in chemistry in Enugu State. The findings of the study revealed among other things that field trip influences students' academic performance in chemistry in secondary schools in Enugu State. Specifically, field trip exposes students to new experiences that helps to broaden their horizons to learning, students' academic performance in chemistry improves when they are exposed to field trip, field trip helps students to understand the theoretical concepts in chemistry by making them concrete, students' retention abilities in chemistry is enhanced when exposed to field trip, and exposure to field trip helps students to concentrate more during chemistry lessons in secondary schools in Enugu State. In addition, field trip influences students' interest in chemistry in secondary schools in Enugu State. Specifically, exposure to field trip helps students to see chemistry as a simple and interesting subject, students enjoy studying chemistry due to field trip exposure, field trip helps students to participate actively during chemistry lessons, field trip makes chemistry relevant and motivates students' interest to learn the subject, and teacher's quality explanation during field trip helps to improve students' interest in chemistry in secondary schools in Enugu State. Finally, lack of funds affects the use of field trip in teaching chemistry, lack of transportation or means of transportation may hinder the effective use of field trip, parents/guardians interference may prevent students from embarking on field trip due to fear, the terrain/nature of the site to visit can hinder the use of field trip, and insecurity can affect the use of field trip in teaching chemistry in secondary schools in Enugu State.

Educational Implications

The findings of this study has a lot of implication for the education sector. Schools should provide students with adequate time for studies, which will create time for the teachers' to use field trip in the teaching of chemistry in secondary schools in Nigeria; When school authority allocate enough time for students to embark on field trip, they will have the opportunity to learn more concepts and theories in their real

learning environment; When the government provide more fund in education the teachers will be able to organize field trip for effective teaching and learning which will help to improve students' interest and academic performance; When parents/Guardians are properly informed that field trip is part of school curriculum and its relevance in students' academic performance, it will encourage students' active participation in teaching and learning processes for better performance; and Employment of qualified science teachers will help to give the students functional teaching and improve their academic performance in chemistry and other science subjects.

Recommendations

Following the findings and educational implications of this study, the researchers therefore recommend as follows:

1. The school authority should plan academic activities with adequate time allocation so as to enable chemistry teachers make use of field trip in teaching of the subject matter.
2. Science teachers should endeavour to take the students to field trip for more learning opportunities.
3. Students should take their study time table very seriously as time is of essence in academic endeavors.
4. Government should employ more qualified science teachers so that students can learn from experienced teachers who can make use of natural environment in teaching of chemistry.

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