Article title: Factors Affecting the Use of Field Trip in Teaching and Learning Biology in College of Education Akwanga, Nasarawa State

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ABSTRACT

The research provides an appraisal of the factors affecting the use of field trips in teaching and learning of Biology in College of Education Akwanga, Nasarawa State. It provides an analysis of the nature of field trip in teaching and learning biology and its significance. The research proffers a methodology of teaching and learning of biology but elucidate the factors affecting its use. Questionnaires were used for the collection of data where one hundred questionnaires were administered and ninety one of it returned for analysis. The analysis used was simple percentage to ascertain the use of field trip in teaching and learning of Biology in college of Education Akwanga, Nasarawa state. From the findings it was clearly seen that the use of field trip in teaching and learning biology is very vital as shown in the summary of the data collected, 827 responses representing 39.55 % strongly agreed with the twenty three questions or statements presented in the questionnaires. 1005 responses representing 48.10% agreed with the twenty three questions or statements presented in the questionnaires. Only 187 responses representing 8.94% disagreed with the twenty three questions or statements presented in the questionnaires and 72 responses representing 3.44% strongly disagreed with the twenty three questions or statements presented in the questionnaires. The percentages of respondents that strongly agreed and agreed are higher than the percentage of respondents that disagreed or strongly disagreed.

CHAPTER ONE

1.0 INTRODUCTION

1.1 BACKGROUND OF THE STUDY

Concepts of Field Trip strategy was introduced in 1827 by George Shillibeer for a Quaker school at Abney Park in Stoke Newington, London, United Kingdom. A field trip is a visit to a place outside the regular classroom which is designed to achieve certain objectives, which cannot be achieved as well by using other means. A field trip or excursion is a journey by a group of people to a place outside their normal environment. When done for students, it is also known as school trip in the UK and New Zealand, school tour in Phillipines, Ensoku (Excursion) in Japan and Klassenfahrt in Germany.

The purpose of the trip is usually observation for education, non experimental research or to provide students with experiences outside their everyday activities, such as going camping with teachers and their classmates. Field Trip enhance the curriculum and 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. Give students experiential learning experiences. As a result the students will have more concept

of the topic as they have learnt through their hand-on experiences. Concrete skills such as note taking are enhanced as Students have to develop questions to be asked, write reports or thank you letters after the trip, or evaluate their experiences. By doing such activities, students will develop various skills such as note taking skills, speaking skills, writing skills. The aim of this research is to observe the subject in its natural state and possibly collect samples. It is seen that more advantaged children may have already experienced cultural institutions outside of school and field trips provide a common ground with more advantaged and less advantaged children to have some of the same cultural experiences in the arts, (Greene, Kisida, Bowen, Jay, Brian and Daniel; 2015)

Field trips are most often done in three steps: preparation, activities and follow up activity. Preparation applies to both the student and the teacher. Teachers often take the time to learn about the destination and the subject before the trip. Activities that happen on the field trips often include lectures, tours, worksheets, videos and demonstrations. Follow-up activities are generally discussions that occur in the classroom once the field trip is completed, (Bitgood and Stephen; 1989).

In western culture people first come across this method during school years when classes are taken on school trips to visit a geological or geographical feature of the landscape, for example. Much of the early research into the natural sciences was of

this form. Charles Darwin is an important example of someone who contributed to science through the use of field trips. (Charles Darwin, 1856)

Popular field trip sites include zoos, nature centers, community agencies such as fire stations and hospitals, government agencies, local businesses, amusement parks, science museums and factories. Not only do field trips provide alternative educational opportunities for children, they can also benefit the community if they include some type of community service. Field trips give opportunity for a student to get out of the classroom and experience something new. The located place for field trip can be zoos, collages, museums, theater and schools. Field trips also provide students the opportunity to take a break from their normal routine and experience more hands on learning. Features of field trip facilitate the learning of abstract concepts. Taking students on a field trip makes learning more effective as they will be able to gain vast ideas on the topic. Motivate students through increased interest and curiosity. Field trips can add variety to the regular classroom instructional program and they tend to be special and enjoyable learning experiences. As a result, students will develop positive attitudes toward related classroom activities. Places like zoos and nature centers often have an interactive displays that allow children to touch plants or animals, (Kulas an Michelle; 2015).

Today, culturally enriching field trips are in decline. Museums across the country report a steep drop in school tours. For example, the field museum in Chicago has

one time welcomed more than 300,000 students every year. Recently the number is below 200,000. Between 2002 and 2007, Cincinnati arts organizations saw a 30 percent decrease in student attendance. A survey by the American Association of School Administrators found that more than half of schools eliminated planned field trips in 2010-11 (Jay, Greene, Brian and Daniel; 2015).

Field trip Increases student-student and student-teacher social interaction. 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. Since parents must give their permission, a letter sent home with the permission forms explaining purpose of the trip is a good way to arouse the curiosity of parent and encourage them to ask the student or teacher about the trip. The parent guides their child in order to make sure that they do not come to any harm. This role allows the parent and teacher to establish a much closer relationship. The interaction between students within themselves will also be increased when they work in groups. Moreover, the interaction between the students and teacher will enhance as the students will have to discuss to the teachers when they have doubts. Field trip develops social awareness as it make students aware of learning activities in everyday life. For instance, visits to supermarkets or shopping malls are typical field experiences, which teachers may

fail to notice. A well-organized trip to a "normal" place is an excellent method of teaching students to observe, ask questions, and learn in the large classroom. 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 example, 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 experienced. The research intends to investigate the factors affecting the use of field trip in teaching and learning of biology in College of Education Akwanga, Nasarawa State.

College of Education, Akwanga, is an institution of higher learning where knowledge is imparted to its seekers and is undertaken in various fields of human endeavor. In this institution, under graduates, Nigeria Certificate of Education (NCE) and Diploma students pursue a degree of study with the aim of getting a certificate at the completion of their studies. In College of Education, Akwanga, two categories of staff are found (Academic and Non-academic) are employed for the purpose of keeping the institutions going. The academic staffs are engaged in teaching and research with other oversight functions which sometimes are required to be performed by the management.

1.2 STATEMENT OF THE PROBLEM

The problem confronting the research is to determine the factors affecting the use of field trip in teaching and learning of biology in College of Education Akwanga, Nasarawa State. This is particularly imperative to ensure the effectiveness of field trips and the attainment of its objectives.

1.3 OBJECTIVE OF THE STUDY

- To determine the nature of field trip in teaching and learning of biology in College of Education Akwanga, Nasarawa State.
- To appraise the significance of field trip
- To determine the factors affecting the use of field trips in teaching and learning of biology in College of Education Akwanga, Nasarawa State.

1.4 RESEARCH QUESTIONS

In order to be able to direct this study to specific areas, the following research questions were formulated:

1. What is the nature of field trips in teaching and learning Biology
2. What is the significance of field trips in teaching and learning Biology
3. What constitute the factors affecting the use of field trips in teaching and learning of biology in College of Education , Akwanga LGA, Nasarawa State

1.5 RESEARCH HYPOTHESES

H₀: Teaching and learning of biology in College of education Akwanga is low

H_i: Teaching and learning of biology in College of education Akwanga is high

H₀: The use of field trip in teaching and learning of Biology in College of education Akwanga is low

H_i: The use of field trip in teaching and learning of Biology in College of education Akwanga is high

H₀: The factors affecting the use of field trip in teaching and learning of biology in College of education Akwanga is low

H_i: The factors affecting the use of field trip in teaching and learning of biology in College of education Akwanga is high

1.6 BASIC ASSUMPTIONS

This proposed study assumes that:

- i. The factors under investigation are key to explaining the use of field trips in teaching and learning Biology
- ii. All sampled teachers were trained and have good knowledge of Biology
- iii. All sampled students have similar background on the use of field trip in teaching and learning Biology
- iv. The sample school follow the same syllable with other schools of its kind

- v. All respondent would be cooperative and provide reliable information

1.7 SCOPE OF THE STUDY

The study shall appraise the nature of field trip in teaching and learning of Biology in College of Education Akwanga, LGA, Nasarawa State and elucidate the factors affecting the use of field trip in teaching and learning Biology.

1.8 SIGNIFICANCE OF THE RESEARCH

The research shall elucidate the nature of field trips in teaching and learning biology in College of Education Akwanga and analyze the factors affecting the use of field trips in teaching and learning Biology. It shall also serve as a veritable source of information on issues of field trip in teaching and learning.

1.9 SUMMARY OF THE CHAPTER

Field Trip enhance the curriculum and are rich in educational possibilities as students learn from actual hands-on or first hand 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.

Field trips are most often done in three steps: preparation, activities and follow up activity. Popular field trip sites include zoos, nature centers, community agencies such as fire stations and hospitals, government agencies, local businesses,

amusement parks, science museums, theater and factories. Not only do field trips provide alternative educational opportunities for children, they can also benefit the community if they include some type of community service.

Field trips can add variety to the regular classroom instructional program and they tend to be special and enjoyable learning experiences. As a result, students will develop positive attitudes toward related classroom activities. Field trip Increases student-student and student-teacher social interaction. Field trips provide an opportunity to involve students, parents, and the teachers in the instructional program. Field trips help the students appreciate the relevance and importance of what they learn in the classroom.

This chapter includes statement of the research problem, the objective of the study, research question and hypothesis, basic assumption, scope of the study and significance of the study.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 INTRODUCTION

Students who directly participate during a field experience generate a more positive attitude about the subject. Many researchers have investigated knowledge gain and learning that occurred during field trips (Hudak, 2003; Kisiel, 2006; Mawdsley, 1999; Michie, 1998; Nadelson & Jordan, 2012; Scarce, 1997; Scribner-MacLean & Kennedy, 2007). Research by Cwikla, Lasalle, & Wilner (2009) suggested that eighth grade students with an interest in science were significantly more likely to acquire science related careers than students with no interest in science. Yet, science is often limited in elementary school curricula despite the recognized importance of early development of science concepts and skills (Fries-Gaither & Lightle, 2011).

Teachers are in position to motivate and capture students' interest in the sciences. Effective methods to develop student interest include experiential activities and field trips, which create authentic learning opportunities for students, regardless of the content area. However, experiential activities and field trips do not simply happen, teachers need to understand that such activities require organization, planning, and student reflection to maximize the learning experience, the same as

classroom-based experiential learning. This chapter covers literature dealing with experiential learning activities and field trips, focusing on science-related field trips and the role of the classroom teacher prior to, during and after the field experience.

2.2 THEORETICAL FRAMEWORK

This includes series of research work on field trips.

2.3 Field Trips

A field trip, which may also be termed as an instructional trip, school excursion, or school journey, is defined by Krepel and Duvall (1981) to be a school or class trip with an educational intent, in which students interact with the setting, displays, and exhibits to gain an experiential connection to the ideas, concepts, and subject matter. Tal and Morag (2009) described field trips as student experiences outside of the classroom at interactive locations designed for educational purposes.

Field trip is not just for recreation, but to learn by examining the evidence in real situation according to Roestiyah (2001). It is a way of teaching carried out by inviting students to a place or a particular object outside of school to learn or investigate something like reviewing a shoe factory, a car repair shop, a department store, and so forth. It may also be called as travel activities or a journey by a group of people to do observation for educational purpose to give the students experience to learn outside their daily activities. Checep (2008) also support that

field trip method is a way of presentation by taking the students to study outside the environment of classroom. Field trip using the environment as a learning resource, stimulates the creativity of the students, information can be more comprehensive and real time, students can seek and process the information by themselves.

In addition, Mulyasa (2005) states that field trip is a Journey under taken by learners to acquire learning experience, especially the direct experience and an integral part of the school curriculum. Although the field trip had a lot of things that are non-academic, general objective of education can be immediately achieved, mainly related to the development of insight into the experience of the outside world. From all opinions above, all of the experts have the same idea that field trip is a journey for students to learn outside from school environment with the purpose to observing and examining the subject in its real state. The field trip can be done in a few hours or take a few days depending on the schools program.

2.4 The Advantage of Field Trip

Field trip has several advantages based on Saiful Bahri Djamarah (2006) which are:

1. Field trip has modern teaching principles that utilizes the real environment in teaching

2. It make the lessons in school more relevant to the reality and the needs of the community
3. It stimulate the creativity of students
4. The information used in teaching is wider and actual.

In the other hand, Syaiful Sagala (2006) argues that the excense of field trip are:

1. The students can observe the diversity of realities closer
2. The students can get experienced by trying to participate in an activity
3. The students can address some issues or statements by seeing, hearing, trying and proving them directly
4. The students can obtain the information by organizing interviews or listening to lectures given during activities learning
5. The students can learn something intensively and comprehensively.

From both opinions above, Saiful Bahri Djamarah and Syaiful Sagala have similar opinions about the advantage of field trip. Saiful Bahri Djamarah says that field trip have modern teaching principles by utilizing the real situation and the information that students get are more relevant and actual while Syaiful Sagala argues that the advantage of field trip are that students can observe the diversity of real object closely and the students can learn more intensively and comprehensively.

2.5 Effective Use of Field Trip

Myers and Jones in Agricultural Education and Communication (2004) says that there are three ways needed to make the field trip effective, they are:

Pre-trip Stage

The pre-trip stage of a field trip involves two major components: preparation and planning. Preparation is the action or process of getting ready for the field trip. In preparing a field trip, the students need to set a clear goal, consider the destination with the budget, make division of task about who would be in charge of the financial, documentation, destination etc. The field trip should have obtained the data about the object such as the location, road access, lodging, meals, transportation budget and ticket. The result of the preparation will be discussed by the students and the lecturer in order to organize the activities required to achieve a desired goal. The planning include booking flight, searching a place to stay during field trip, consider the tourism object that will be visited, discuss what are the necessary things that the students should bring, make the itinerary of the destinations, limit the budget etc.

Trip Stage

Refers to carrying out a plan where the students are doing the field trip. The students can implement what they have planned in the itinerary while the lecturer

will accompany to supervise the students to keep the trip smooth from the itinerary up to destination.

Post-trip Stage

The third and final stage of a successful field trip is the post trip stage. Reporting is one of activities in the form of submission of progress or result of activity on all matters relating to this field trip. Once the field trip is completed, the students will be asked to make a report regarding what they have seen, experienced, and learned during the field trip. The result of the field trip will be discussed in front of the class with the other students to learn about the field trip.

2.6 Field trips may be planned for five purposes:

1. To provide firsthand experience,
2. To stimulate interest and motivation in science,
3. To add relevance to learning and interrelationships,
4. To strengthen observation and perception skills, and
5. To promote personal (social) development (Michie, 1998).

Field trips take students to locations that are unique and cannot be duplicated in the classroom. Each student observes natural settings and creates personally relevant meaning to the experience. Interactive exhibits help students play with concepts, activities often not possible in the classroom. Earlier course content suddenly becomes relevant as students assimilate and accommodate new understanding and

cognition (Lei, 2010). The connection between the field trip venue and the classroom links the field trip's experiential learning with prior experiences and learning from the classroom (Lei, 2010).

To save money and time from preparation and traveling, some instructors choose to simply use the school computers and take digital field trips. Options are plentiful and students no doubt learn from the digital experience, but students only experience what the media thinks is important, and the students do not encounter a multidimensional activity in which all their senses are fully involved (National Research Council (NRC), 2009). In contrast, field trips are experiential, authentic social events that create a new way of knowing an object, concept, or operation (Scarce, 1997). Quality experiences lead to deeper learning and interest development (NRC, 2009).

2.7 Kinds of Field Trips

Formal field trips consist of planned, well-orchestrated experiences where students follow a documented format. Government agencies, museums, and businesses offer excellent formal experiential learning activities and programs, which are usually run by the venue's staff. One student's experience is essentially the same as any other student's experience. Teachers find such programs comfortable because the students are bound to a choreographed agenda. However,

there are minimal opportunities for students to personally interact and connect to the experience (Rennie, 2007).

Informal field trips are less structured and offer students some control and choice concerning their activities or environment. When observing students interacting in an informal education setting such as a science center or field station, teachers are often amazed by how much students know and which students possess the most knowledge (Rennie, 2007). Informal education is a legitimate cognitive learning model. "Informal science experiences - in school-based field trips, student projects, community based science youth programs, casual visits to informal learning settings, and press and electronic media can be effectively used to advance science learning" (Hofstein & Rosenfeld, 1996). Students feel at ease in an informal learning environment. The focus may be individualized, activities are not competitive or assessed, interaction is voluntary and unforced, and social interaction is encouraged. Together, these qualities create an intrinsically motivated student (Rennie, 2007) that encourages students to examine their connection to the local and national communities, as well as their connection to the local and global ecosystems (Krepel & Durrall, 1981).

Non-school related informal field trips such as family activities, also contribute significantly to children's science knowledge (Rennie & McClafferty, 1995), although science knowledge and interest acquired at home may be compromised if

the majority of experience occurs through the media such as television and the Internet, in which the children may have difficulty determining reality from entertainment.

2.8 Experiential Learning

It is important to understand experiential learning when discussing field trips. Experiential learning is authentic, first-hand, sensory-based learning. Experiential activities explore, touch, listen to, watch, move things, disassemble and reassemble. Learning consists of grasping an experience and then transforming it into an application or result (Kolb, 1983). The Association for Experiential Education defined experiential learning as a methodology in which educators direct students to a specific experience, and then guide the students through reflection to “increase knowledge, develop skills, clarify values, and develop people's capacity to contribute to their communities” (Association for Experiential Education, 2012, <http://www.aee.org/about/whatIsEE>). Experiential learning is not restricted to a certain age levels. Infants, toddlers, and growing children develop all their skills and knowledge through experience. Kolb (1983) described experiential learning using a spiraling four step cycle. A student has an experience. Reflection occurs as the student talks about the experience, and abstraction occurs as the student thinks about the experience. The student plans a new experience to test the new ideas, and the new experience takes place, and the cycle continues. Each time a cycle is

completed, some learning has taken place. Although experiential learning appears to be simple, there are caveats to be considered. The learning process is not instant. Time is required to analyze and then synthesize a concept that accommodates into an already established knowledge pool. Experiential learning is not one dimensional. A learned concept will integrate with all previous knowledge. A student with many connections concerning a subject will accommodate new knowledge faster and with greater clarity (Kisiel, 2006).

Experiential activities should play a significant, beneficial role in any science classroom. NRC (2009) illustrated that students who acquire hands-on, authentic experience may develop curiosity and interest, leading to a desire to learn more. Observation skills improve. Social skills develop as the students share perceptions and knowledge with others. Students may begin to look forward to classes and connect previous knowledge and experiences with the new concepts. A strengthened interest in science may lead the student onto a science related career path or establish higher quality scientific literacy. Teachers also gain many benefits. Students are interested and motivated, permitting the instruction to rise to new and higher levels. Students who are interested and alert in class will learn the concepts, thus standardized test scores may improve and construct meaningful understanding (Kolb, 1983). According to Kolb's (1983) learning cycle, learning experientially requires the learner to have an experience and then reflect, analyze,

and test the idea to develop knowledge and to create another experience. Teachers often use this learning format in the formal classroom through labs and projects. Informal experiential learning can be an equally powerful learning tool with unique virtues. Attendance and involvement are voluntary or free choice, the curriculum is varied, the learning opportunities are neither competitive nor evaluative, all ages may participate at any given time, and the effort is learner motivated (NRC, 2009; Rennie, 2007). Formal educators might consider increasing student interaction by adding informal learning opportunities to reinforce classroom knowledge and allow students to assimilate and accommodate experiences to their classroom knowledge. An informal education venue can be a valuable resource that reinforces classroom pedagogy (Nabors, Edwards, & Murray, 2009).

A field trip with a single focus will provide a potential impact to students' cognitive skills, knowledge, interests, and future career (Hutson, Cooper, & Talbert, 2011). This may be particularly true for students who are academically challenged or described as 'at risk' due to low performance on high-stakes tests or performance in the classroom. Field trips offer a unique opportunity for students to create connections, which will help them gain understanding and develop an enjoyment of learning.

Students on field trips sharpen their skills of observation and perception by utilizing all their senses (Nabors et al., 2009). Students develop a positive attitude

for learning, motivating them to develop connections between the theoretical concepts in the classroom and what has been experienced (Falk, Martin, & Balling, 1978; Hudak, 2003). Outdoor field trips provide an opportunity for students to develop increased perception, a greater vocabulary, and an increased interest in the outdoors (Hoisington, Savleski, & DeCosta, 2010). Developed interest stimulates curiosity, empowering students to ask questions, discuss observations, consider past experiences, or simply ponder the topic (Farmer, Knapp, & Benton, 2007; NRC, 2009). When on a field trip, the venue is not the only location that affects students; they also gain knowledge and understanding about their neighborhoods and communities as they travel from the school to the field trip venue (Nabors et al., 2009).

Personal connections are important in environmental curricula, not only because students gain understanding through the connections, but also by developing emotional connections to the subject matter. Increasing awareness and care lead to increasing passion for the subject matter, no matter whether it concerns the environment, animals, or a social situation (Tal, 2004; Tal & Morag, 2009; Variano & Taylor, 2006). With increased interest or passion, learning is promoted as students conduct deeper observations, give in to curiosity and conduct simple investigations, discuss the subject matter with peers and teachers, and construct more abstract connections (Falk and Dierking, 2000).

The majority of field trips occur during the school day, but extended field trips provide another option. Overnight field trips promote social growth for participating students by encouraging positive interactions among the students, teachers, and chaperones. Students experience independence away from home and the classroom. Some students will develop with the freedom, but others may possibly need emotional support and well defined limits (Pace & Tesi, 2004). Field trips, especially overnight experiences, also benefit teachers. Dillon, Morris, O'Donnell, Reid, Rickinson, & Scott, (2005) noted that teacher and student relationships develop or improve, and teachers may gain new perspectives and ideas of how to teach the subject matter in a more experiential manner.

Benefits from field trips are not guaranteed. Field trips are not meant to be short term teaching instruments. Students may acquire short term learning, but without reinforcement from reflection or debriefing, the learning or interest development may only be temporary. Short term memory does not constitute learning (Dierking & Falk, 1997). In contrast, Farmer, Knapp, and Benton (2007) suggested that one year after a well-orchestrated field trip experience, many students remembered what they had seen and heard, and displayed a newly developed pro-science attitude. When learning is discussed, it is most often assumed to occur in the formal classroom setting. Learning is contextualized, affected by motivation, expectation, prior knowledge, experience, prior interests, beliefs, control, and

choice (NRC, 2009). Learning requires time for students remembrance of what they had seen and heard, and displayed a newly developed pro-science attitude.

2.9 Barriers and Negative Effects Of Field Trip

Field trip venues such as museums and zoos present problems that need to be recognized. Flashy exhibits and fancy displays often obscure the real science within the exhibit. Displays may have sloppy or poorly worded explanations that yield no learning potential. Ethical dimensions of the subject matter are sometimes ignored or glossed over. Science might be portrayed as easy and unproblematic, omitting any reference to failures and issues experienced by the scientists during research and discovery, thereby failing to communicate the scientific process or communication of scientific thought, and focusing on conclusions rather than the journey or process involved to make the discoveries (Rennie 2007). Michie (1998) identified seven barriers to successful field trips:

1. Transportation;
2. Teacher training and experience;
3. Time issues such as school schedule and teacher's ability to prepare;
4. Lack of school administrator support for field trips;
5. Curriculum inflexibility;
6. Poor student behavior and attitudes; and
7. Lack of venue options.

Finding time for the trip and making arrangements for students who cannot make the trip adds tasks to an already busy teacher schedule (Mawdsley, 1999; Scarce, 1997). Teachers need to determine the logistics to transport students. Large introductory classes present unique challenges due to the need of larger transportation facilities, safety issues, more student logistical planning, and time lost trying to organize the large group (Hudak, 2003).

It is imperative that the teacher prepares the students for the field trip in order to maintain a level of control that will allow for learning to occur when the class arrives at the venue (Ewert, 2009). Kalvaitis (2007) suggested that often, a teacher's biggest fear is losing control of the students once at the field trip location. Upon arrival at a field trip venue, students are often disoriented resulting in excited, explorative, and unrestrained behavior (Falk et al., 1978). The teacher should be prepared to focus the students' mental and physical energy towards participation at the venue (Lei, 2010).

2.10 Pedagogy and Role of the Teacher

Teachers have little training or pedagogical knowledge relating to the process of field trip planning and preparation (Michie, 1998; Tal and Morag, 2009). Pre-service teachers experience a field trip during each clinical classroom observational visit, and it is not unusual if the pre-service teacher went on a field trip during clinical classroom observations or student teaching. In spite of these

many field experiences, pre-service teachers generally are not taught the pedagogy or methods necessary to plan and orchestrate a field trip (Kisiel, 2006; Tal, 2004). Anderson, Lawson, and Mayer-Smith (2006) illustrated that pre-service teachers who gain field experience at a non-school venue gain a more functional, applicable view of constructivist education and teaching skills. For this reason, teacher education programs should include experiential education, and field trip preparation and implementation for all pre-service teachers, who need to understand their responsibilities and role before, during and after a field trip (Tal & Morag, 2009).

According to Tal and Steiner (2010), teachers tend to fall into one of three patterns while on a field trip:

1. Teachers are involved and participate in all the preparation and field trip activities;
2. If the field trip is one that has occurred regularly over the years, school tradition may dictate that teachers follow an established routine, which may or may not be participatory;
3. Passive teachers do not participate with the students during the experience. For example, a teacher may rely completely on the school administration to set up a field trip, the teacher may not personally communicate with or visit

the venue, or during the field trip, the teacher disassociates from the field trip activities.

Just as professional development is necessary to train teachers how to present a new curriculum, professional development focusing upon field trips would help teachers understand the necessity of preplanning, participation, and student reflection (Dori & Herscovitz, 2005). Experience in planning and attending field trips is important for both teachers and students. The teachers need to understand how to prepare and teach the students to learn out of the classroom, because the novelty of informal learning is a distraction to students who are unaccustomed to attending field trips or non-classroom settings.

2.11 Before The Field Trip

The teacher should visit the venue prior to the field trip, to learn the layout of the venue and determine whether the venue is suitable for all the students. Religious beliefs, for example, may require a realignment of the activities or development of a differentiated plan for the concerned students. During the student orientation prior to the field trip, the teacher should prepare students by describing the venue and its layout. The students should understand the focus or purpose of the experience, through a lesson designed to prepare a conceptual foundation on which the students may connect their experiences (Pace, 2004; Rennie, 2007). Orion and Hofstein (1994) cited three variables that prepare students for field trips:

understanding the venue layout, the focus of the activities, and being prepared to be in an open, informal venue, what the authors call “novelty space.” Reduction of the novelty space would enhance learning during the field trip. Prepared students know behaviour expectations, increase interaction with the exhibits and look for the connections between the exhibits and classroom concepts. The school’s science curriculum should connect to the venue and its focus. There is little question that a field trip is a valuable experience for the students, but it is important that the teacher connect the students’ experiences on the trip with concepts and lessons taught in the classroom. The field trip should not be a stand-alone experience (Kisiel, 2006).

2.12 During the field trip

As the field trip begins, the teacher may need to help some students become comfortable in the new environment. As activities begin, the teacher should be prepared to interpret the venue’s program leader’s commentary to any unfocused or confused students (Rennie & McClafferty, 1995). During the field trip, students experience learning in an authentic, informal, natural setting. Each student’s prior knowledge gained both from the classroom and from their personal out-of-school experiences, is used to make connections to the field trip experience (Pasquier & Narguizian, 2006). The teacher should keep the students engaged. The venue’s staff should work in concert with the teacher to help students make connections

between the experience and the concepts involved. Generally it is the venue's staff's duty to keep the activities interesting.

Teachers often utilize worksheets to help students focus on exploring and learning the targeted concepts. Worksheets are quite effective when one worksheet is given to a small group, in which the students are better observers, interact more frequently, discuss the concepts, and ultimately develop more connections between the concepts and the experience (Kisiel, 2003; Rennie, 2007). Simple fill-in-the-blank task completion work sheets are not effective, when every student is responsible for his or her own data, where the focus is solely to fill in the data and not to explore or participate in activities (Kisiel, 2003).

Students respond to a field trip in a variety of ways. Average students may suddenly reveal a never seen before level of excitement, focus, and inquiry (Hefferan, Heywood, & Ritte, 2002). Conversely, some students known for strong classroom performances might be less proficient in the field and may or may not enjoy the challenge to succeed in the new, informal environment. Each student is unique and each field experience is unique, so that every field experience will result in many different academic, cognitive, and social gains (Rennie, 2007). Student prior knowledge and experience define the cognitive foundation onto which new connections can be made (NRC, 2009). If done properly, students will

build long term memories of the field trip experiences, especially among high school and college students (Wilson, 2011).

2.13 After the field trip

The teacher's actions after the field trip are very important. The students' experiences need to be reinforced through discussion, activities, reading, a television show or movie (Falk & Dierking, 2000; Kisiel, 2006; Orion & Hofstein, 1994; Pace & Tesi, 2004; Tal & Steiner, 2006). Students need to solidify their new ideas and observations which have not yet made connections. Reflection will help build those connections, as well as reinforce the successful connections already made on the trip. Students generate greater understanding as teachers develop potential connections through reflection (Kisiel, 2006). Students should discuss their observations and experiences, and in the case of elementary grades, create presentations to share with their classmates. During the remainder of the school year, the teacher should connect new classroom concepts to the students' field trip experiences (Rennie & McClafferty, 1995). In Tal & Steiner's (2006) examination of teacher's roles during field trips to museums, neither elementary nor secondary grade level teachers carried out quality post-visit activities. Teachers must recognize the importance of post field trip reflection and debriefing to maximize student interest and learning.

2.14 Teacher Engagement During Experiential Learning

Once teachers are empowered and learn how to develop and orchestrate a successful field trip, they will be more inclined to schedule field trips (Tal & Morag, 2009). Ferry (1993) noted that pre-service teachers, reluctant at first, gained an increased desire to participate with informal, experiential lessons after receiving instruction about field trip pedagogy (Ferry 1993). Teachers and community experts should meet and develop a working relationship that would enable teachers to consider local field trips as viable options for curriculum differentiation (Michie, 1998).

Ellenbogen, Luke, and Dierking (2004) provided five suggestions to empower teachers to forge stronger links between formal science education and informal, free-choice learning:

1. Opportunities to learn from local and media resources should be investigated and considered.
2. Effective field trips should be an integral part of every science program.
3. Teachers should investigate local resources, such as museums.
4. Teachers should help local resources understand and interface the curriculum and standards with the resource programming.
5. The local resources need to communicate important issues with the teachers.

According to a zoo staff member, a school field trip was most effective when it was led by a teacher who was trained at a zoo sponsored teacher workshop. The trained teachers understood the necessity for preplanning and preparing the students about concepts that would be explored (Rennie & McClafferty, 1995). Conversely, in spite of research and literature suggesting otherwise, most teachers assigned tasks or worksheets and made little effort to connect the exhibit's theme to what was being studied in the classroom (Griffin & Symington, 1997). The teachers have to believe the field trip is an important aspect of the students' experience if the trip is to be a success (Shireen & Czerniak, 2003).

Teachers should plan and manage the field trip so that once the students are oriented and on task, they have the freedom to explore their own interests. An inquiry based strategy allows students to connect classroom concepts to field trip experiences. Students learn to explore for answers to their questions, rather than rely on the teacher or venue's staff member. Students should learn to develop questions to stimulate personal curiosity and interest while on the field trip.

The teacher should participate where appropriate, to model how the students and chaperones are expected to behave and be engaged in the activities (Snyder, 1994). Too often, the teacher hands the class over to the venue leader, and then stands back to talk or relax. The teacher should model the behaviour that is expected from the students. The teacher should remain connected with the well-prepared students,

but allow them to experience the activities, being available to answer questions and offer direction when needed.

If the chaperones are to participate or lead an activity, they require training before the field trip. The teacher needs to orient all the chaperones, describing the venue, the expectations of the students, and the expectations of the chaperones. Once at the venue, even though the majority of the activities are the responsibility of the venue's exhibits or staff members, the teacher is ultimately responsible for all that happens, so the teacher needs to maintain control of the students and chaperones (Kisiel, 2006).

2.15 Student Engagement During Experiential Learning

Students find outdoor learning activities to be realistic, interesting and interactive, although it is not surprising that students who prefer to be indoors often prefer to avoid the outdoor climatic conditions (Hudak, 2003). But to maximize connections with past knowledge and classroom concepts, students still need somebody to discuss those connections. A method to connect concepts to experiences is through the immediate social network. Students may peer teach, explain what to look for or how to complete a task, read placards and signs to each other, and discuss their personal understanding of what they are experiencing. Rennie (2007) observed that quite often the students who stepped out as peer instructors have been students who performed poorly in class.

2.16 Learning From Field Trips

Researchers have had varying degrees of success in measuring cognitive learning resulting from a school field trip, but the evidence generally suggests that such trips can have a positive impact on learning of facts and concepts (Anderson, 1999; Anderson & Lucas, 1997; Bamberger & Tal, 2006; Beiers & McRobbie, 1992; Feher & Rice, 1985; Flexer & Borun, 1984; Gottfried, 1980; Knapp, 1996; Mallon & Bruce, 1982; Miglietta, Belmonte, & Boero, 2008; Orion & Hofstein, 1994; Stronck, 1983; Tuckey, 1992 Jennifer, Martin; 2008).

Documented learning gains are often relatively small, but small effects are not surprising given the one-off nature of most school trips. Indeed, it could be argued that any gains at all are noteworthy, given the brevity of the experiences and the variety of factors that can affect the extent to which learning occurs. Thus, considering that cognitive learning can be an outcome of school trips—and that it is an outcome valued by many teachers, parents and administrators—it is important to consider ways of maximizing these outcomes by focusing on field trip designs that make best use of the unique learning opportunities of specific field trip destinations (Storksdieck et al., 2006, 2007). Although cognitive gains from field trips are considered important, social and affective outcomes have also been proposed as valuable for field trips to museums (Csikszentmihalyi & Hermanson,

1995; Hooper-Greenhill, 1991; Meredith, Fortner, & Mullins, 1997; Rix & McSorley, 1999; Wellington, 1990 Jennifer, Martin; 2008).

It could even be argued that affective outcomes—such as increased motivation or interest, sparking curiosity, or improved attitudes towards a topic—may be more reasonable for school trips than specific factual or concept learning outcomes, since the short-term nature of most field trip experiences may not be best suited to create lasting cognitive effects.

While major gains in cognitive understanding are unlikely in the short time span of most school field trips, brief experiences can certainly evoke strong emotional responses.

Fewer studies have focused on affective learning from school field trips, but those that have point toward the positive impacts that such experiences can have on affective outcomes (Finson & Enochs, 1987; Fortner & Lahm, 1990; Javlekar, 1989; Knapp, 1996; Mallon & Bruce, 1982; Sibthorp & Knapp, 1998; Storksdieck, 2006; Jennifer, Martin; 2008).

In addition, a survey of university students as to why they had chosen their area of study indicated that visits to science centers played a role in the decisions of at least some to pursue science careers (Salmi, 2003). On the other hand, school field trips can also create less favorable emotions. Although students seem more likely to remember social and personally relevant aspects of field trips, they also seem to

dislike and keep less favorable memories of field trips that seem overly structured and leave little room for their personal visit agenda (Falk & Dierking, 1992, 1997; Gilbert & Priest, 1997; Jensen, 1994; Wolins, Jensen, & Ulzheimer, 1992 Jennifer, Martin, 2008). Clearly, teachers and informal educators need to consider what can be the lasting impacts of school field trips.

2.17 Long Term Impact Of Field Trip

Few research studies have attempted to look at longer-term impacts of school field trips, due primarily to the logistical challenges involved in collecting data over extended periods of time. However, in one study school children participated in individual, open ended interviews about class trips they had taken during the previous two years (Wolins et al., 1992 Jennifer, Martin; 2008). Based on the elaborateness of the children's descriptions, the authors concluded that high personal involvement, links with the curriculum and multiple visits to the same institution enhanced long-term impact. Although repeat visits are rarely possible, it would seem that the impact of even a single trip could be enhanced by making the experience more memorable and personal and by building on the trip experience in the classroom. Moreover, we would argue that increasing the impact of trips is even more important for pupils who have few opportunities for such experiences. Other researchers have found evidence of visitors' long-term memories of museum visits (from two months to several years later), although such memories tend to be

episodic in nature and the impact of such visits on cognitive outcomes is unclear (Falk & Dierking, 1997; McManus, 1993; Stevenson, 1991 Jennifer, Martin,(2008).

Nevertheless, it would seem that field trips at least have the possibility of leading to longer-term cognitive outcomes, especially if those are defined broadly to include awareness and general learning. Evidence for such a possibility comes from a recent study of primary and secondary students visiting a marine biology museum in Italy (Miglietta et al., 2008). Using pre- and post questionnaires, this study found that students retained information they had learned about sharks, particularly shark behavior, up to three months after a visit.

Evidence of even longer-term outcomes was found in study of a class trip to a science center in Israel (Bamberger & Tal, 2008). Although pre-trip measures of knowledge or understanding were not used, interviews with 8th grade students 16months after the visit revealed that the students recalled facts and details of the experience, such as exhibit names, activities in which they had participated, and guides' explanations. Students also indicated that they felt they had learned from the visit and that social interactions were a valued part of their experience.

Although the extent of long-term effects of school trips on cognitive learning may remain relatively unclear, there is some evidence that suggests long-lasting positive affective impact, with students expressing increased interest in the subject matter

of a school trip 18 months after a visit (Knapp, 2000; Sibthorp & Knapp, 1998 Jennifer, Martin; 2008).

In a larger scale study (involving 655 and then 300 children in two phases), Jarvis and Pell (2002, 2005) found that 20% to 25% of children visiting an interactive space center developed a new interest in science and in pursuing a science career, an interest that was maintained five months after the visit. However, although students who were strongly interested in becoming scientists before the visit retained this interest, science enthusiasm expressed by other students dropped. Thus, it appears that school trips can have a positive impact, but perhaps not on all students. Affective impacts in this study were also influenced by teacher activities: Students whose teachers were enthusiastic about science and engaged in more extensive follow-up activities expressed more positive attitudes than students in other classes (Jarvis & Pell, 2005).

Generally, though, the challenges of measuring long-term impacts of a museum visit either on cognitive understandings or on attitudes are formidable. The difficulty of doing so is compounded by the many factors that impact learning both during and following a visit, as well as the influence of subsequent experiences on an individual's knowledge (Bransford, Brown, & Cocking, 1999; Dierking, 2002; Falk & Storksdieck, 2005). The persistence of long-term memories of such events, however, suggests that these visits have significance; they are thus likely to add to

a person's repertoire which they can draw upon to interpret future experiences. It is this potential connection with future experiences that makes a visit—or any experience—fundamentally or genuinely educative (Dewey, 1938; Jennifer, Martin; 2008), but also difficult to assess in terms of its learning potential. A school field trip begins as preparation in the classroom and ends in some form of follow-up, and the extent and quality of both strongly influence the learning potential of the entire field trip experience.

2.18 Factors Impacting The Effectiveness Of School Field Trips

In addition to attempts to measure outcomes, research also provides insight into the factors that can impact the effectiveness of school trips as learning experiences. One such factor is the novelty of the trip setting, which can detract from students' conceptual and possibly affective learning if novelty of the environment is either very strong, or absent altogether (Balling & Falk, 1980; Balling, Falk, & Aronson, 1980; Martin, Falk, & Balling, 1981 Jennifer, Martin; 2008).

Orientation to the trip setting prior to or during the visit can mitigate this impact (Anderson & Lucas, 1997; Falk, 1983; Orion & Hofstein, 1994 Jennifer, Martin; 2008).

The social interaction that occurs on a museum visit can also be an important feature of the school field trip experience (Falk & Dierking, 1992, 2000; Dierking, 2002; Price & Hein, 1991 Jennifer, Martin; 2008).

Students are often observed sharing discoveries and experiences with others on their visits, behaviors that could support learning if used constructively in the field trip design (Carlisle, 1985; Gottfried, 1980; Tuckey, 1992). Moreover, in a review of years of evaluations of non-school science programs, Price and Hein (1991) advocated having students work in small groups because small groups allow students to ask more questions, do more hands-on work, and become more involved generally with the program—all conditions which could plausibly contribute to learning. Thus, research suggests that attention to the social context of the visit is important in order to support both affective and cognitive learning from these experiences (Birney, 1988; Jensen, 1994; Rennie, 1994; Jennifer, Martin; 2008).

Another important factor that can influence what children or adults learn particularly cognitively from a museum visit is their prior knowledge about a topic (Falk & Adelman, 2003; Falk & Dierking, 1992, 2000). The impact of prior knowledge on learning in any setting is well documented (diSessa, 1982; Falk & Storksdieck, 2005; Minstrell, 1989; Resnick, 1983; Roschelle, 1995; Strike & Posner, 1985; Wray & Lewis, 1997; Jennifer, Martin; 2008).

In a museum setting, discussions with students suggest that they learn the most from an exhibit when they already have some understanding of the concept being presented (Feher & Rice, 1985; Tuckey, 1992; Jennifer, Martin, 2008). Put

differently, students' prior knowledge impacts what they learn from an exhibit (Anderson, 1999; Beiers & McRobbie, 1992; Falk, Koran, & Dierking, 1986; Storksdieck, 2006). At the same time, it can be difficult for museum practitioners to provide experiences specifically appropriate to each student's prior knowledge. Thus, the role of the teacher (who, we hope, is relatively attuned to the prior knowledge of his or her students) in mediating such experiences becomes even more apparent.

Other factors that can also affect learning on any museum visit include individuals' interests in particular topics, motivations, and agendas with which they approach the experience (Falk & Adelman, 2003). Furthermore, it appears that children bring their own personal agendas when visiting with their families, which affect what is learned (Ellenbogen, 2002). Nevertheless, accommodating the agendas and interests of each child in a class would be quite challenging for any teacher leading a visit.

2.19 The Impact Of Structure

One important factor that has been shown to impact learning from school field trips, but that is discussed controversially in the literature, is the field trip's degree of structure.

Generally, research suggests that in a museum setting, structured experiences such as guided tours or specific, detailed tasks, mostly supported by worksheets and

other attention focusing devices—can increase cognitive learning but may dampen interest overall or result in less positive attitudes (Flexer & Borun, 1984; Stronck, 1983 Jennifer, Martin, 2008).

Structure is often imposed by worksheets, which have been criticized for the way in which they may be used (e.g., as a tool for behavior management, often with many detailed questions that do not allow pupils to explore and engage with the unique experience the museum setting offers; Kisiel, 2003, 2006; McManus, 1985; Price & Hein, 1991). However, teachers are fairly comfortable with worksheets, museums are eager to provide them, and there is some evidence that both teachers and students feel that learning is supported with (well thought-out and appropriately designed) worksheets (Griffin, 1994; Kisiel, 2003). Their use should certainly not be dismissed; in fact, worksheets can be highly effective in promoting discovery- and inquiry-style field trip experiences (Kisiel, 2003), especially when they expose students to a wide range of relevant information. Mony and Heimlich (2008) reported that visitors to a zoo mentally merged message sources about conservation: They attributed messages to docents, when in fact they actually received them through signage. The study suggests that visitors to museum type settings, including students on field trips, might learn more by reading than they themselves realize. By focusing student attention, well-designed worksheets might

tap into the power of existing interpretive materials while providing students with a visit experience that is more reflective of free-choice visits.

McManus (1985) made several recommendations for ways to turn worksheets into more effective learning tools in a museum setting. Worksheets should

1. Encourage observation,
2. Allow time for observation,
3. Refer to objects rather than labels,
4. Be unambiguous about where information might be found, and
5. Encourage talk among group members.

Based on a synthesis of research on worksheets, Mortensen and Smart (2007) developed a set of design criteria for worksheets to support learning from a school trip. Worksheets based on these criteria intended to encourage free-choice exploration of curriculum-related topics were found to increase the number and diversity of students' content-related conversations during a museum visit.

Based on existing research, it seems that the degree and type of structure matters, not simply its presence or absence. To maximize both cognitive and affective outcomes, it would seem that field trips should provide a moderate amount of structure while still allowing for free exploration (Falk & Dierking, 1992; Hooper-Greenhill, 1991; Price & Hein, 1991; Rennie & McClafferty, 1995; Storksdieck,

2006). Such a format is also congruent with preferences expressed by children for less rigidly structured museum visits (Birney, 1988).

Moreover, a more recent study (Bamberger&Tal, 2007) found that “limited choice” visits in which students were given some kind of structured task or direction, but also allowed some choice and control in exploring an exhibition—were more engaging than highly structured *or* unstructured visits. Such visits also seemed to enhance deeper involvement, scaffold content learning, and encourage social interactions, particularly between students and adults.

Finally, the structure of an experience includes what happens before and after the visit, and research demonstrates that both cognitive and affective learning from a school field trip can be enhanced by the use of pre- and post-visit activities in the classroom (Anderson, 1999; Anderson, Lucas, Ginns, & Dierking, 2000; Farmer & Wott, 1995; Finson & Enochs, 1987; Gennaro, 1981; Lucas, 2000). For instance, Lucas (2000) documented the way in which one teacher’s extensive preparation and follow-up to a science center visit resulted both in conceptual learning and a greater appreciation of the learning opportunities provided by the experience itself. Although such extensive preparation and follow-up are not realistic for many teachers, particularly those who must contend with a national curriculum or rigid state standards, the role of the teacher in extending school trips’ impact via preparation and follow-up activities is key, especially in light of the ephemeral

nature of many such experiences. These findings also highlight the need for museum practitioners and researchers to find effective ways to support the use of pre- and post-visit activities by teachers who bring their students on class trips. In fact, it could be argued that pre-visit preparation and post-visit in-class follow-up are integral parts of the overall field trip experience, the learning pathway that is anchored around a field trip to an out-of-school setting or venue (Storksdieck, 2006)

2.20 Summary Of The Chapter

The outcome of an experience depends on a person's interests, motivation, life circumstances at that time, needs, and prior experiences and knowledge (Rennie, 2007). Field trips offer an opportunity to motivate and connect students to appreciate and understand classroom concepts, which increase a student's knowledge foundation, promoting further learning and higher level thinking strategies. With understanding comes confidence and intrinsic motivation.

A successful and quality field trip requires teacher preparation and interaction. Some factors should be addressed before the trip. The experience needs to be planned. The teacher should pre-visit the venue to meet the staff and arrange the activities, and then prepare the students by orienting them to the venue's layout, activities, and expectations. Student groupings should be set up prior to arrival at the venue. Chaperones need to be trained. The trip needs to connect to the

curriculum, students should be actively engaged, and all students should be able to take part in the trip regardless of financial, physical or intellectual status. Teachers need to consider safety issues and should prepare to embrace the unexpected.

On the day of the field trip, the teacher may hand the program to the venue's staff, but the teacher should remain involved, participating with the activities and guiding students when necessary. Perhaps the teacher's most difficult task is to allow the students freedom to experience the activities. Back at the classroom, it is imperative that the teacher spend sufficient and quality time to reflect on the experiences and help students build connections to the curriculum concepts. All aspects of the trip's success are directly or indirectly dependent on the teacher (Millan, 1995).

Field trips have become less common due to limited funding and limited available time due to each school systems' focus on standardized testing. Non-traditional field trips are still quite possible. Campus field trips provide a cost-free alternative, while retaining the benefits of traditional field trips. Outside, students might explore around the school grounds, focused on a specific topic or concept. In the classroom, students might create their own classroom museum exhibits, or a local university or science museum might share mobile exhibits with the school. No matter whether the school is urban, suburban, or rural, ecology is everywhere (Lei, 2010). There is much to be learned from a vacant lot, the edge of a parking lot, a

puddle, or a bush. Field trips can stimulate new learning, increased attitude towards science, trigger interest development, and provide many rewards to both the teacher and the students (Scarce, 1997).

Researchers in the college of education and health profession at the university of Arkansas found that field trips or planned excursions have significant benefits for students beyond educational aspects. "we found that students who attended a school tour at Crystal Bridges Museum of Art demonstrated stronger critical thinking skills, displayed higher levels of tolerance, had more historical empathy and developed a taste for being a cultural consumer in the future," said Jay Greene, one of the researchers. "We found that these benefits were much larger, in general, for students from rural areas or high-poverty schools, as well as minority students."

The researchers announced the results of a study analyzing the impact of school field trips to Crystal Bridges Museum of American Art on students in grade K-12. Greene, Professor of education reform; Brian Kisida, senior research associate; and Dan Bowen, doctoral student in education policy, surveyed nearly 11,000 students and 500 teachers at more than 120 schools. These are some great ideas for possible design learning academy field trips. Many are free and easily assessable in San Diego County. (John Dunphy, 2002-2018)

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 INTRODUCTION

This chapter outlines the research design, the population, the sample and sampling technique, instrumentation, validity of the instrument, reliability of the instruments, procedure for data collection and procedure for data analysis

3.2 RESEARCH DESIGN

In this study, the researcher chose to use questionnaire. The intent of questionnaire is that it's the cheapest way to reach a lot of people and allows respondent to remain anonymous. The researcher would gain data from two groups of respondents; the students and teaching staff of College of Education, Akwanga, Nasarawa State. The teaching staffs would be from the Department of Biology and NCE III students of the department.

3.3 POPULATION OF THE STUDY

The target group of this research would be Biology Students and Teachers of College of Education Akwanga, Nasarawa State.

3.4 SAMPLING AND SAMPLING TECHNIQUE

College of Education Akwanga was randomly selected since it follows the same Biology syllable and pursues the same curriculum offered under the 9-3-4 system of Education. Multistage sampling procedure would be adopted and proportionate stratified sampling would be used to select the same sample size.

3.5 INSTRUMENTATION

The instrument for data collection that would be used is questionnaire which is a set of questions designed by the researcher that relate to the aim and objectives of the study to which the respondents are required to answer by writing in their responses. The questionnaire would be grouped into two: Biology teachers' Questionnaire (BTQ) and Biology Students Questionnaire (BSQ)

3.6 VALIDITY OF THE INSTRUMENT

The questionnaire would be examined and scrutinized by the supervisor to ensure that the items are related to the research questions and that they measure what they are designed to measure.

3.7 RELIABILITY OF THE INSTRUMENT

The consistency of the instrument would be tested to determine its reliability were the tester repeats a test on same individual under identical conditions.

3.8 PROCEDURE FOR DATA COLLECTION

The researcher would administer Biology Teachers' Questionnaire (BTQ) to 20 Teachers. The Biology Students' Questionnaire (BSQ) would also be administered to 100 students.

3.9 PROCEDURE FOR DATA ANALYSIS

Data collected would be analyzed both qualitatively and quantitatively. Qualitative data would be obtained from the open-ended items in both the teachers and Students Questionnaire. The data would be grouped into different categories or themes consistent with the research objectives, deduction and generalization would be made using patterns and trends of responses. Quantitative data would be obtained from closed-ended items in the Teachers and Students instrument. The data would be analyzed using simple descriptive statistics: percentage, mean and frequency presented with the aid of tables and graphs.

3.10 SUMMARY OF CHAPTER

The chapter outline the following; research design, population of the study, sampling and sampling technique, instrumentation, validity of the instrument, reliability of the instrument, procedure for data collection and procedure for data analysis.

Scale points was used ranging from “Strongly agree” (SA), “agree” (A), “disagree” (D) and “Strongly disagree” (SD) to determine students’ feelings.

CHAPTER FOUR

4.0 DATA ANALYSIS, PRESENTATION AND DISCUSSION OF RESULTS

4.1 INTRODUCTION

The findings of the study are presented in this chapter based on the data collected from respondents as per the research objectives, which is finding factors affecting the use of field trip in teaching and learning of Biology. Ninety one questionnaires were responded to, out of the one hundred questionnaires administered. This gives a 91% which was adequate for analysis. Discussion of the results was done considering the objective of the study.

4.2 DATA PRESENTATION

Table 4.2.1: Sex Of Respondents

VARIABLES	FREQUENCY	PERCENTAGE (%)
Male	49	53.85
Female	42	46.15
Total	91	100.00

Source: Field Survey, 2018

From the table above, 49 respondents representing a percentage of 53.85% are male while 42 respondents representing 46.15% are female. This shows that, the number of male respondents exceeds that of the female respondents.

Table 4.2.2: Age of Respondents

VARIABLES	FREQUENCY	PERCENTAGE (%)
15-20	29	31.87
21-25	31	34.07
26-30	11	12.09
31-35	15	16.48
36-40	5	5.49
Total	91	100

Source: Field Survey, 2018

From the table above 29 respondents representing 31.87% are within the age range of 15-20 years. 31 respondents representing 34.07% are within the age range of 21-25 years. 11 respondents representing 12.09% are within the age range of 26-30 years. 15 respondents representing 16.48% are within the age range of 31-35 years. 5 respondents representing 5.49% are within the age range of 36-40 years.

Table 4.2.3: Qualification of Respondents

VARIABLES	FREQUENCY	PERCENTAGE (%)
NCE	70	76.92
B.SC	11	12.09
M.SC	8	8.79
P.HD	2	2.20
Total	91	100

Source: Field Survey, 2018

From the above table 70 respondents represents 76.92% of NCE students. 11 respondents represents 12.09% of B.Sc students. 8 respondents represent M.Sc holders and 2 respondents represent 2.20% of P.hD holders.

Table 4.2.4: The Use of Field Trip in Teaching and Learning of Biology

S/NO	ITEMS	SA	A	D	SD
1.	I enjoy going for Biology field trips because it bridge the gap between theory and practical.	45 49.45%	39 42.86%	5 5.50%	2 2.19%
2.	Field trip gives me the opportunity to get out of the classroom and experience something new. It enables me to gain new knowledge and detailed information on areas I never did before.	31 34.07%	49 53.85%	10 10.99%	1 1.09%
3.	Biology field trips help me to view the practical applications of the theoretical knowledge I acquire at school. It helps me to materialize this knowledge that becomes meaningful and the retention of such knowledge increases.	51 56.04%	30 32.97%	10 10.99%	0 0%
4.	Biology field trip creates awareness by fostering my interest in various topics and events.	41 45.05%	35 38.46%	5 5.50%	10 10.99%
5.	Field trips motivate increased interest and curiosity in learning Biology.	1 1.09%	60 65.93%	21 23.08%	9 9.90%
6.	Biology field trip make learning	60	21	7	3

	more effective as it makes me gain vast ideas on the topic.	65.93%	23.08%	7.70%	3.29%
7.	Field trips add variety to the regular classroom instructional program, as it tends to be special and enjoyable learning experience.	18 19.78%	55 60.44%	10 10.99%	8 8.79%
8	Field trips with two or more day's duration promote social growth for participating students by encouraging positive interactions among the Students, Teachers and Chaperones.	54 59.34%	23 25.27%	9 9.89%	5 5.50%
9.	The learning opportunities are neither competitive nor evaluative, all age group may participate at a given time and the effort is learner motivated.	21 23.08%	49 53.85%	15 16.48%	6 6.59%
10.	Field trip with a single focus will provide a potential impact to students' cognitive skill, knowledge, interests and future career.	60 65.93%	30 32.97%	0 0%	1 1.10%
11.	Earlier course content suddenly becomes relevant as students assimilate and accommodate new understanding and cognition.	50 54.95%	40 43.96%	1 1.09%	0 0%
12.	Biology field trip promotes personal development of student.	10 10.99%	70 76.92%	7 7.69%	4 4.40%
13.	Field trips leave the students with a long lasting impression of the lessons learnt during the trip.	32 35.16%	48 52.75%	11 12.09%	0 0%
14.	Field trip strengthens observation and perception skills in students.	25 27.47%	54 59.34%	9 9.89%	3 3.30%
15.	Biology field trip stimulates the				

	creativity in students as information can be more comprehensive and real time and information can be sought out for and processed by students.	18 19.78%	62 68.13%	9 9.89%	2 2.20%
16.	Field trips enable students to have direct experience by trying to participate in the activity.	50 54.95%	36 39.56%	2 2.20%	3 3.29%
17.	Field trips make contribution to learning with fun and also make me to gain different experiences.	31 34.07%	52 57.14%	7 7.70%	1 1.09%
18.	The learning process in a field trip is not instant. Time is required to analyze and then synthesize a concept that accommodates into the knowledge pool. A student with many connections concerning a subject will accommodate new knowledge faster with greater clarity	49 53.85%	40 43.96%	2 2.19%	0 0%
19.	My most memorable lessons learnt on Biology was that accompanied by a field trip outside the regular classroom as involvement in a real world experience makes learning more meaningful and memorable compared with the regular classroom	28 30.77%	51 56.04%	7 7.70%	5 5.49%
20.	Biology field trip provides a common ground for both the more-advantaged and the less-disadvantaged student to have the same cultural experience.	26 28.57%	47 53.85%	9 9.87%	7 7.69%

21.	The learning gained in field trips directs the students to a specific experience and then guides the student through reflection to “increased knowledge develops skills, clarify values and develop peoples’ capacity to contribute to their communities”.	45 49.45%	32 35.16%	12 13.19%	2 2.20%
22.	Field trip increases the general academic performance of students. It increases the effectiveness of the learning process.	50 54.95%	32 35.16%	9 9.90%	0 0%
23.	Field trips enable the curriculum and are rich in educational possibilities as students learn from the hand-on experience rather than simply reading or learning about something that is abstract.	31 34.07%	50 54.95%	10 10.99%	0 0%

Source: Field Survey, 2018

The study sought to identify the opinion of students towards the use of field trips in teaching and learning of biology. This helped in detecting their level of interest towards Biology field trip. Scale points was used ranging from “Strongly agree” (SA), “agree” (A), “disagree” (D) and “Strongly disagree” (SD) to determine students’ feelings through their responses. In the survey conducted 91 undergraduate students and teachers of College of Education, Akwanga, Nasarawa State filled and returned the questionnaires administered to them out of the one hundred questionnaires administered. The survey lasted for the period one week.

Students were given the following twenty-three (23) questions (Q1-Q23) and their answers vary from: Strongly Agree (SD) Agree (A) Disagree (D) and Strongly Disagree (SD).

Q1: I enjoy going for Biology field trips because it bridge the gap between theory and practical: From the above table, 45 respondents representing 49.45% strongly agreed with Q1, 39 respondents representing 42.86% agreed with the statement in Q1, 5 respondents representing 5.50% disagree with Q1 and 2 respondents representing 2.19% strongly disagree with Q1. This implies that field trip bridged the gap between theory and practical since the percentage of the respondents that agreed with the statement are higher than those that disagreed.

Q2: Field trip gives me the opportunity to get out of the classroom and experience something new. It enables me to gain new knowledge and detailed information on areas I never did before: From the table above, 31 respondents representing 34.07% strongly agree with Q2, 49 respondents representing 53.85% agreed with Q2, 10 respondents representing 10.99% disagreed with Q2 and 1 respondent representing 1.09% strongly disagreed with Q2. This implies that Field trip give students the opportunity to get out of the classroom and experience something new.

Q3: Biology field trips help me to view the practical applications of the theoretical knowledge I acquire at school. It helps me to materialize this knowledge that becomes meaningful and the retention of such knowledge increases: From the table

above, 51 respondents representing 56.04% strongly agreed with Q3, 30 respondents representing 32.97% agreed with Q3, 10 respondents representing 10.99% disagreed with Q3 and 0 respondent representing 0% strongly disagreed with Q3. This implies that Biology field trips help to view the practical applications of the theoretical knowledge acquired at school.

Q4: Biology field trip creates awareness by fostering my interest in various topics and events: from the table above, 41 respondents representing 45.05% strongly agreed with Q4, 35 respondents representing 38.46% agreed with Q4, respondents representing 5.50% disagreed with Q4 and 10 respondents representing 10.99% strongly disagreed with Q4. This implies that Biology field trip creates awareness by fostering my interest in various topics and events.

Q5: Field trips motivate increased interest and curiosity in learning Biology: From the above table, 1 respondent representing 1.09% strongly agreed to Q5, 60 respondents representing 65.93% agreed to Q5, 21 respondents representing 23.08% disagreed and 9 respondents representing 9.90% strongly disagreed to Q5. This implies that Field trips motivate increased interest and curiosity in learning Biology since the percentage of those that agreed exceeds those that disagreed.

Q6: Biology field trip make learning more effective as it makes me gain vast ideas on the topic: From the table above, 60 respondents representing 65.93% strongly agreed with Q6, 21 respondents representing 23.08% agreed with Q6, 7

respondents representing 7.70% disagreed with Q6 and 3 respondents representing 3.29% strongly disagreed with Q6. This implies that Biology field trip make learning more effective as it makes students gain vast ideas on the topic.

Q7: Field trips add variety to the regular classroom instructional program, as it tends to be special and enjoyable learning experience: From the table above, 18 respondents representing 19.78% strongly agreed with Q7, 55 respondents representing 60.44% agreed with Q7, 10 respondents representing 10.99% disagreed with Q7 and 8 respondents representing 8.79% strongly disagreed with Q7. This implies that, Field trips add variety to the regular classroom instructional program, as it tends to be special and enjoyable learning experience.

Q8: Field trips with two or more day's duration promote social growth for participating students by encouraging positive interactions among the Students, Teachers and Chaperones: From the table above, 54 respondents representing 59.34% strongly agreed with Q8, 23 respondents representing 25.27% agreed with Q8, 9 respondents representing 9.89% disagreed with Q8 and 5 respondents representing 5.50% strongly disagreed with Q8. This implies that, Field trips with two or more day's duration promote social growth for participating students by encouraging positive interactions among the Students, Teachers and Chaperones.

Q9: The learning opportunities are neither competitive nor evaluative, all age group may participate at a given time and the effort is learner motivated: From the

table above, 21 respondents representing 23.08% strongly agreed with Q9, 49 respondents representing 53.85% agreed with Q9, 15 respondents representing 16.48% disagreed with Q9 and 6 respondents representing 6.59% strongly disagreed with Q9. This implies that, the learning opportunities are neither competitive nor evaluative, all age group may participate at a given time and the effort is learner motivated.

Q10: Field trip with a single focus will provide a potential impact to students' cognitive skill, knowledge, interests and future career: From the table above, 60 respondents representing 65.93% strongly agreed with Q10, 30 respondents representing 32.97% agreed with Q10, 0 respondent representing 0% disagreed with Q10 and 1 respondent representing 1.10% strongly disagreed with Q10. This implies that, Field trip with a single focus will provide a potential impact to students' cognitive skill, knowledge, interests and future career.

Q11: Earlier course content suddenly becomes relevant as student assimilate and accommodate new understanding and cognition: From the table above, 50 respondents representing 54.95% strongly agreed with Q11, 40 respondents representing 43.96% agreed with Q11, 1 respondent representing 1.09% disagreed with Q11 and 0 respondent representing 0% strongly disagreed with Q11. This implies that, earlier course content suddenly becomes relevant as student assimilate and accommodate new understanding and cognition.

Q12: Biology field trip promotes personal development of student: From the table above, 10 respondents representing 10.99% strongly agreed with Q12, 70 respondents representing 76.92% agreed with Q12, 7 respondents representing 7.69% disagreed with Q12 and 4 respondents representing 4.40% strongly disagreed with Q12. This implies that, Biology field trip promotes personal development of student

Q13: Field trips leave the students with a long lasting impression of the lessons learnt during the trip: From the table above, 32 respondents representing 35.16% strongly agreed with Q13, 48 respondents representing 52.75% agreed with Q13, 11 respondents representing 12.09% disagreed with Q13 and 0 respondent representing 0% strongly disagreed with Q13. This implies that, Field trips leave the students with a long lasting impression of the lessons learnt during the trip.

Q14: Field trip strengthens observation and perception skills in students: From the table above, 25 respondents representing 27.47% strongly agreed with Q14, 54 respondents representing 59.34% agreed with Q14, 9 respondents representing 9.89% disagreed with Q14 and 3 respondents representing 3.30% strongly disagreed with Q14. This implies that, Field trip strengthens observation and perception skills in students.

Q15: Biology field trip stimulates the creativity in students as information can be more comprehensive and real time and information can be sought out for and

processed by students: From the table above, 18 respondents representing 19.78% strongly agreed with Q15, 62 respondents representing 68.13% agreed with Q15, 9 respondents representing 9.89% disagreed with Q15 and 2 respondents representing 2.20% strongly agreed with Q15. This implies that, Biology field trip stimulates the creativity in students as information can be more comprehensive and real time and information can be sought out for and processed by students.

Q16: Field trips enable students to have direct experience by trying to participate in the activity: From the table above, 50 respondents representing 54.95% strongly agreed with Q16, 36 respondents representing 39.56% agreed with Q16, 2 respondents representing 2.20% disagreed with Q16 and 3 respondents representing 3.29% strongly disagreed with Q16. This implies that, Field trips enable students to have direct experience by trying to participate in the activity

Q17: Field trips make contribution to learning with fun and also make me to gain different experiences: From the table above, 31 respondents representing 34.07% strongly agreed with Q17, 52 respondents representing 57.14% agreed with Q17, 7 respondents representing 7.70% disagreed with Q17 and 1 respondent representing 1.09% strongly disagreed with Q17. This implies that, Field trips make contribution to learning with fun and also make me to gain different experiences

Q18: The learning process in a field trip is not instant. Time is required to analyze and then synthesize a concept that accommodates into the knowledge pool. A

student with many connections concerning a subject will accommodate new knowledge faster with greater clarity: From the table above, 49 respondents representing 53.85% strongly agreed with Q18, 40 respondents representing 43.96% agreed with Q18, 2 respondents representing 2.19% disagreed with Q18 and 0 respondents representing 0% strongly disagreed with Q18. This implies that, the learning process in a field trip is not instant.

Q19: My most memorable lessons learnt on Biology was that accompanied by a field trip outside the regular classroom as involvement in a real world experience makes learning more meaningful and memorable compared with the regular classroom: From the table above, 28 respondents representing 30.77% strongly agreed with Q19, 51 respondents representing 56.04% agreed with Q19, 7 respondents representing 7.70% disagreed with Q19 and 5 respondents representing 5.49% strongly disagreed with Q19. This implies that, the most memorable lessons learnt on Biology were that accompanied by a field trip outside the regular classroom.

Q20: Biology field trip provides a common ground for both the more-advantaged and the less-disadvantaged student to have the same cultural experience: From the table above, 26 respondents representing 28.57% strongly agreed with Q20, 47 respondents representing 53.85% agreed with Q20, 9 respondents representing 9.87% disagreed with Q20 and 7 respondents representing 7.69% strongly

disagreed with Q20. This implies that, Biology field trip provides a common ground for both the more-advantaged and the less-disadvantaged student to have the same cultural experience.

Q21: The learning gained in field trips directs the students to a specific experience and then guides the student through reflection to “increased knowledge develops skills, clarify values and develop peoples’ capacity to contribute to their communities”: From the table above, 45 respondents representing 49.45% strongly agreed with Q21, 32 respondents representing 35.16% agreed with Q21, 12 respondents representing 13.19% disagreed with Q21 and 2 respondents representing 2.20% strongly disagreed with Q21. This implies that, the learning gained in field trips directs the students to a specific experience and then guides the student through reflection to increased knowledge develops skills, clarify values and develop peoples’ capacity to contribute to their communities.

Q22: Field trip increases the general academic performance of students. It increases the effectiveness of the learning process: From the table above, 50 respondents representing 54.95% strongly agreed with Q22, 32 respondents representing 35.16% agree with Q22, 9 respondents representing 9.90% disagreed with Q22 and 0 respondents representing 0% strongly disagreed with Q22. This implies that, Field trip increases the general academic performance of students. It increases the effectiveness of the learning process.

Q23: Field trips enable the curriculum and are rich in educational possibilities as students learn from the hand-on experience rather than simply reading or learning about something that is abstract: From the table above, 31 respondents representing 34.07% strongly agreed with Q23, 50 respondents representing 54.95% agreed with Q23, 10 respondents representing 10.99% disagreed with Q23 and 0 respondents representing 0% strongly disagreed with Q23. This implies that, Field trips enable the curriculum and are rich in educational possibilities as students learn from the hand-on experience rather than simply reading or learning about something that is abstract.

Table 4.2.5: The Summary Of The Table 4.2.4

VARIABLES	FREQUENCY	PERCENTAGE (%)
Strongly Agree (SA)	827	39.55
Agree (A)	1005	48.10
Disagree (D)	187	8.94
Strongly Agree (SD)	72	3.44
Total	2091	100.0

Source: Field Survey, 2018

From the table above, the summary of the data collected shows that, 827 responses representing 39.55 % strongly agreed with the twenty three questions or statements presented in the questionnaires. 1005 responses representing 48.10% agreed with the twenty three questions or statements presented in the questionnaires. Only 187 responses representing 8.94% disagreed with the twenty three questions or statements presented in the questionnaires and 72 responses representing 3.44%

strongly disagreed with the twenty three questions or statements presented in the questionnaires. The percentages of respondents that strongly agreed and agreed are higher than the percentage of respondents that disagreed or strongly disagreed.

4.3 ANSWERING OF RESEARCH QUESTIONS

The nature of field trip in teaching and learning of Biology consists of hand on activities relating to ecology, scientific observation, resource management and the citizenship. Students learn about the importance of soil, wetlands for people and wild life; sample insects from the ponds to determine the health of each water body; use various scientific methods to determine how different types of pollution affect river systems, ponds, lakes and bays and learn about animals and plants living on earth. Biology Field trips are designed to bring home the lesson taught in class are make such lesson a reality.

The significance of field trips in teaching and learning Biology include the following; field trips are important to help bridge the gap between classroom experience and hand –on experience. Field trips are a vital requirement of educational curriculum. Field trips can add variety to the regular classroom instructional program and they tend to be special and enjoyable learning experiences. As a result, students will develop positive attitudes toward related classroom activities. Field trip Increases student-student and student-teacher social interaction. Field trips provide an opportunity to involve students, parents, and the

teachers in the instructional program. Field trips help the students appreciate the relevance and importance of what they learn in the classroom.

The factors affecting the use of field trips in teaching and learning of biology in College of Education , Akwanga LGA, Nasarawa State constitute the following:

1. Transportation;
2. Teacher training and experience;
3. Time issues such as school schedule and teacher's ability to prepare;
4. Lack of school administrator support for field trips;
5. Curriculum inflexibility;
6. Poor student behavior and attitudes; and
7. Lack of venue options.

Finding time for the trip and making arrangements for students who cannot make the trip adds tasks to an already busy teacher schedule.

4.4 SUMMARY OF RESULTS

After careful analysis of the data, the following findings were obtained and reported:

The responses of the questionnaires was only restricted to Biology teachers and students of COE Akwanga. Majority of the respondents were male representing of 53.85% the total percentage of the respondents. Female comprise of 46.15%.

The highest age range of respondents was 21-25 years representing 34.07% followed by 15-20 years representing 31.87%. The least age range of respondents was 36-40 years representing 5.49%

Majority of the respondents are NCE students representing 76.92% and 12.09% B.Sc students.

From the research carried out, 827 responses representing 39.55 % strongly agreed with the twenty three questions or statements presented in the questionnaires. 1005 responses representing 48.10% agreed with the twenty three questions or statements presented in the questionnaires. Only 187 responses representing 8.94% disagreed with the twenty three questions or statements presented in the questionnaires and 72 responses representing 3.44% strongly disagreed with the twenty three questions or statements presented in the questionnaires. The percentages of respondents that strongly agreed and agreed are higher than the percentage of respondents that disagreed or strongly disagreed.

In summary the use of field trip in teaching and learning Biology is highly significant to the overall performance of the students. Although, some factor tends to affect the use of field trip which include: transportation; teacher training and experience; time issues such as school schedule and teacher's ability to prepare; lack of school administrator support for field trips; curriculum inflexibility; poor student behavior and attitudes; and lack of venue options.

CHAPTER FIVE

5.0 SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 INTRODUCTION

This chapter gives the summary of major findings, conclusion, recommendations, suggestion for further studies and contributions to knowledge.

The use of field trip in teaching and learning biology is highly significant in the effective dissemination of knowledge.

5.2 SUMMARY OF MAJOR FINDINGS

This study was designed to investigate the factors affecting the use of field trip in teaching and learning of biology in College of Education Akwanga, Nasarawa State. The researcher adopted descriptive survey design and data collected was also descriptive. The total number of questionnaires used for the research was one hundred of which ninety one was returned and analyzed.

From the research it was discovered that the use of field trip in teaching of Biology is ~~the~~ more effective than the teaching of the subject in a classroom environment. Although some factors tends to affect the use of this method of teaching such as funding, teacher's incompetence, overloaded curriculum and parents indifference about the subject matter.

Students are highly motivated in field trip teaching method of biology and tend to retain the knowledge acquired for a very long period of time. Field trip aids

retention of lesson taught maximally. The scale points of strongly agree SA, and Agree carried the highest percentage of responses from the respondents showing the importance of field trip in teaching and learning of Biology.

5.3 CONCLUSION

The result obtained from this study shows that the students of College of Education Akwanga, Nasarawa State are so interested in Biology field trip but some factors tend to deter the use of field trip in teaching and learning biology.

Biology field trips help the student in the choice of future career. Field trip is a very important method of teaching and learning and its use in the teaching process should be highly encouraged.

5.4 RECOMMENDATIONS

Understanding the usefulness of field trips in teaching and learning of Biology in our tertiary institution is vital and as such should be maximally encouraged. Field trip should not be restricted to media but a physical tour should be undertaken as it brings home the concepts learnt in class.

Field trips should be encouraged in all levels of education. And institution should make room for field trip by adding it up to the curriculum and ensuring its implementation.

Factors affecting the use of field trips such as transportation; teacher training and experience; time issues such as school schedule and teacher's ability to prepare;

lack of school administrator support for field trips; curriculum inflexibility; poor student behavior and attitudes; and lack of venue options should be considered and measures to reduce these factors should be established.

5.5 SUGGESTIONS FOR FURTHER STUDIES

This study was limited to College of Education Akwanga of Nasarawa state. So I suggest that further work should be carried involving more respondents and more schools. Since College of Education where the study is carried out is a tertiary institution, this kind of studies should be carried out in both secondary and primary school to bring a balance to the conclusion reached.

Further research should be carried out to step up the use of field trip in all levels of education.

1. Factors affecting the use of field trip in secondary schools
2. Attitude of parent toward the use of field trip

5.6 CONTRIBUTION TO KNOWLEDGE

This study would be of importance to Teachers, students and Parents. School administrator would find the work useful and other researchers can draw a guide from it in a subsequent research work concerning field trip. In order for the use of field trip to be successful, all stakeholders in education; parents, teachers, school administrators and government at all level must take up their responsibilities in helping to bring about a successful field trip in the school curriculum.

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APPENDIX

Faculty of Education

ABU Zaria

Akwanga Campus

Nasarawa State

7th September, 2018

Dear Respondent,

I am a post graduate student of the above institution carrying out a research on the topic **“Factors affecting the use of field trip in teaching and learning Biology in College of Education Akwanga, Nasarawa State”**.

Please, provide answers to these questions to the best of your Knowledge. The information given will be treated confidentially.

Thanks in anticipation of your cooperation.

Yours faithfully

Ogenyi Oganya Deborah

PDE/266/2017

QUESTIONNAIRE

SECTION A: BIO DATA

1. Gender: Male ☐ female ☐
2. Age: 15-20 ☐ 21-25 ☐ 26-30 ☐ 31-35 ☐ 36-40 ☐
3. Marital status: Single ☐ Married ☐ Separated ☐ Divorced ☐
4. Qualification: NCE ☐ HND ☐ B.SC ☐ M.SC ☐ P.HD ☐
5. Which of the following problem do you think affect you most when going for Biology field trip?
 - i. Lack of interest in Biology field trip
 - ii. Biology field trip is too expensive
 - iii. Lack of Teacher's preparation and participation in Biology Field trip
 - iv. Lack of parental support in embarking on Biology field trip

Any other (specify) _____

Suggest possible solution to the problem you specified:

SECTION B:

This section has statements that you are to decide carefully whether you strongly agree (SD), Agree (A), Disagree (D) or Strongly Disagree (SD). Tick against each statement depending on your feelings.

S/NO	ITEMS	SA	A	D	SD
1.	I enjoy going for Biology field trips because it bridge the gap between theory and practical.				

2.	Field trip gives me the opportunity to get out of the classroom and experience something new. It enables me to gain new knowledge and detailed information on areas I never did before.				
3.	Biology field trips help me to view the practical applications of the theoretical knowledge I acquire at school. It helps me to materialize this knowledge that becomes meaningful and the retention of such knowledge increases.				
4.	Biology field trip creates awareness by fostering my interest in various topics and events.				
5.	Field trips motivate increased interest and curiosity in learning Biology.				
6.	Biology field trip make learning more effective as it makes me gain vast ideas on the topic				
7.	Field trips add variety to the regular classroom instructional program, as it tends to be special and enjoyable learning experience.				
8	Field trips with two or more day's duration promote social growth for participating students by encouraging positive interactions among the Students, Teachers and Chaperones.				
9.	The learning opportunities are neither competitive nor evaluative, all age group may participate at a given time and the effort is learner motivated.				
10.	Field trip with a single focus will provide a potential impact to students' cognitive skill, knowledge, interests and future career.				
11.	Earlier course content suddenly becomes relevant as student assimilate and accommodate new understanding and cognition.				
12.	Biology field trip promotes personal development of student.				
13.	Field trips leave the students with a long lasting impression of the lessons learnt during the trip.				

14.	Field trip strengthens observation and perception skills in students.				
15.	Biology field trip stimulates the creativity in students as information can be more comprehensive and real time and information can be sought out for and processed by students.				
16.	Field trips enable students to have direct experience by trying to participate in the activity.				
17.	Field trips make contribution to learning with fun and also make me to gain different experiences.				
18.	The learning process in a field trip is not instant. Time is required to analyze and then synthesize a concept that accommodates into the knowledge pool. A student with many connections concerning a subject will accommodate new knowledge faster with greater clarity				
19.	My most memorable lessons learnt on Biology was that accompanied by a field trip outside the regular classroom as involvement in a real world experience makes learning more meaningful and memorable compared with the regular classroom				
20.	Biology field trip provides a common ground for both the more-advantaged and the less-disadvantaged student to have the same cultural experience.				
21.	The learning gained in field trips directs the students to a specific experience and then guides the student through reflection to "increased knowledge develops skills, clarify values and develop peoples' capacity to contribute to their communities".				
22.	Field trip increases the general academic performance of students. It increases the effectiveness of the learning process.				
23.	Field trips enable the curriculum and are rich in educational possibilities as students learn from the hand-on experience rather than simply reading or learning about something that is abstract.				

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