

THE USE OF FIELD TRIPS IN THE TEACHING AND LEARNING OF SCIENCE AT KOMENDA COLLEGE OF EDUCATION IN THE CENTRAL REGION OF GHANA

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ABSTRACT

The goal of this study was to perceive how field trips are used in scientific teaching and learning at Komenda College of Education in Ghana's Central Region. In a descriptive study, questionnaires were utilized to collect data from 240 students and all science tutors 7 at Komenda College of Education. Statistical Package for Social Services version 17 was used to analyze the data. The ultimate agreement (2.5 and above) or disagreement with the statements was determined by computing the Means for all of the statements from the weighted averages (below 2.5). Students viewed field trips as a recreational activity and did not think they could be useful as a science teaching approach although tutors were aware of their importance in education. College authority's lack of support is the most important challenge affecting the use of field trips as a teaching and learning approach in the teaching and learning of science were found to be administration and curriculum inflexibility, difficulty in accessing transportation (including cost), and unwillingness on the part of receiving institutions and companies to receive students on certain days of the week. The recommendations include raising awareness of the value of field trips in science teaching and learning at all levels of education, as well as including college administration and students in decision-making when planning for any educational trip. Field visits should also be used in all areas of teaching, particularly scientific sessions, with a focus on the objectives to pique students' enthusiasm for using field trips. The recommendations included creating awareness of the importance of field trips in the teaching and learning of science, and involving College Management, parents and students in the decision-making process. Again, field trips should be part of lessons, with a stress on the objectives to stimulate students' interest in the teaching and learning of science.

Keywords: Field Trip, science, Learning of science, firsthand experience, strategy

1. Introduction

A field trip is a trip arranged by the college, undertaken for educational purposes, in which students go to places where the materials of instruction may be observed and studied directly in their functional setting [1]. Field trips have great potential to positively affect students' learning activities and students' attitudes toward their education [2, 3]. The importance of field trips cannot be underestimated because students can make real-world connections to classroom learning which directs their attention and engagement.

A field trip is a journey taken by a group of people to a place away from their usual environment. In education, field trips are defined as visits to an outside area of the normal classroom and made by a teacher and students for purposes of firsthand observation. A common strategy used to teach concepts, experiences, and ideas to students that cannot be provided in a traditional classroom setting is taking them on field trips. A short-term learning activity, a field trip gives students the chance to observe their chosen subject outside of the typical classroom environment. The most striking examples of educational trips are discovering other cultures and customs, visiting the home of languages, discovering unspoiled environments, and engaging in fascinating local culture. If students are engaged, meaningful learning can take place. The shared experience of a field trip allows students to reflect on common experiences and enhance learning beyond the personal connections each student would be able to make [4].

In addition, the felt quality of experience is stored and processed in different areas of the brain, which allows for the greater overall integration of understanding in different Meaningful learning can occur if the students are actively participating in the learning environment. A field trip allows students to reflect on shared experiences and advance learning beyond the personal connections that would otherwise allow each student to make a difference in the classroom [4]. Additionally, the felt nature of experience is processed and stored in many parts of the pupils' brains, allowing for higher overall integration of learning in various ways [4]. Several researchers have argued that field trips can be thoughtfully incorporated into the curriculum at any time and at all educational levels. Investigators, including Guisasola, Morentin, and Zuza, argued that field trips might be carefully integrated into the curriculum [5]. The authors stressed the value of including related teachings and exercises that take place before, during, and following the field trip. To encourage students to explore and engage with exhibits, other people, and other students outside the classroom, they required that they be assigned independent or group projects. According to Schatz, the pressures of standardized examinations and student assessments have also contributed to the pupils' lack of interest in field trips. Additionally, the time spent traveling to and from the college may force students to miss some classes, resulting in a wasted vacation [6]. To make the trip successful for the student and the college, tutors, and principals must work together to design the trip. One of the required subjects in Ghanaian colleges of education is integrated science, which calls for more hands-on practical activities to help students learn the skills they need to continue their education. Integrated science helps people to think more critically about every part of their lives since most of what they study is based on the natural world around us; this makes it a crucial subject that needs special attention. When these tutors are posted to their schools, it will influence how they teach and stimulate students' interest in science. One such complement can enhance the science teaching and learning at Komenda College of Education.

1.1 Statement of the Problem

For students taking Integrated science as a course that deals closely with practical tasks, field trips are crucial. Teaching students science involves teaching them life skills and how to be independent adults. It is a truth that many tutors and students lament the absence of practical lessons in science instruction, which makes it challenging for pupils to comprehend what is being taught. Unintentional observations show that the majority of scientific lesson subjects are full of real-life situations that ought to be simple for students to understand but remain because, of the complexity of science materials and lab equipment. The majority of practical activities at Komenda College of Education require less equipment, and technical expertise in some subjects is insufficient to give students the best comprehension of the concepts. During integrated science conferences, tutors lament the scarcity of tools and equipment and the frequent refusal of the Ministry of Education to grant their requests for tools and equipment for use in the colleges. Because tutors tend to focus on the theoretical components of the lectures, it might be difficult for students to fully comprehend what they are being taught. Additionally, there are not enough sophisticated machines required for practical instruction to accommodate the enormous number of students enrolled in that course. Field trips would have been a better teaching and learning technique for science in Ghana at the basic school level as a whole to force the students to observe real items and draw conclusions to reject imagination and abstract thinking in science lessons. But as can be seen from the paucity of literature on the topic, not many studies have been done on the part that field trips play in the teaching and learning of Integrated Science in Ghana. To address the issue of field trips at the teaching and learning of Integrated Science in colleges of Education in Ghana, this study is being undertaken as a baseline study to provide the necessary recommendations for all stakeholders. This is because fieldwork is necessary for students to gain practical experience in the teaching and learning of science, and its absence at Komenda College of Education is unquestionably a concern.

1.2 Purpose of the Study

The purpose of this study is to examine how field trips might be used to teach and learn Integrated Science at Komenda College of Education in Ghana's KEEA District. to recognize the difficulties in planning field trips for Integrated Science teaching and learning. The project will also make recommendations for how to turn field guides into an effective tool for teaching and studying integrated science at the Komenda College of Education in Ghana's Central Region.

1.3 Research Questions

The following research questions guided the conduct of the study:

1. What are the respondents' awareness of field trips' application in Integrated Science teaching and learning at Komenda College of Education?
2. What role do field trips play in the instruction and learning of integrated science?

- How do the difficulties of scheduling and planning field trips impact the teaching and learning of integrated science?

2. LITERATURE REVIEW

According to studies, a field trip is one of the best methods for giving every student real-world experience because it allows them to see the object in its natural setting. Whether the visit is to a small factory or a large one, it still conveys the necessary information about the subject being studied. After class, students begin to make connections between what is happening in the classroom and the “real world.” Students start to realize that what they learn in the classroom can directly influence who they become as people in the future and can help them address the problems they see in the world around them. A field trip is described as a planned excursion to a destination of interest outside of the classroom where students can explore actual circumstances and apply what they have learned [1]. A lot of the literature on the subject comes from scientific centers and museums. Sedzielarz and Robinson, argued that since cognitive learning can be a result of college field trips and is a result that many tutors, parents, and administrators value, it is important to think about ways to maximize these results by concentrating on field trip designs that make the most of the distinctive learning opportunities of particular field trip destinations [7]. The environment of the field trip before the visit can lessen its effect on the students [8].

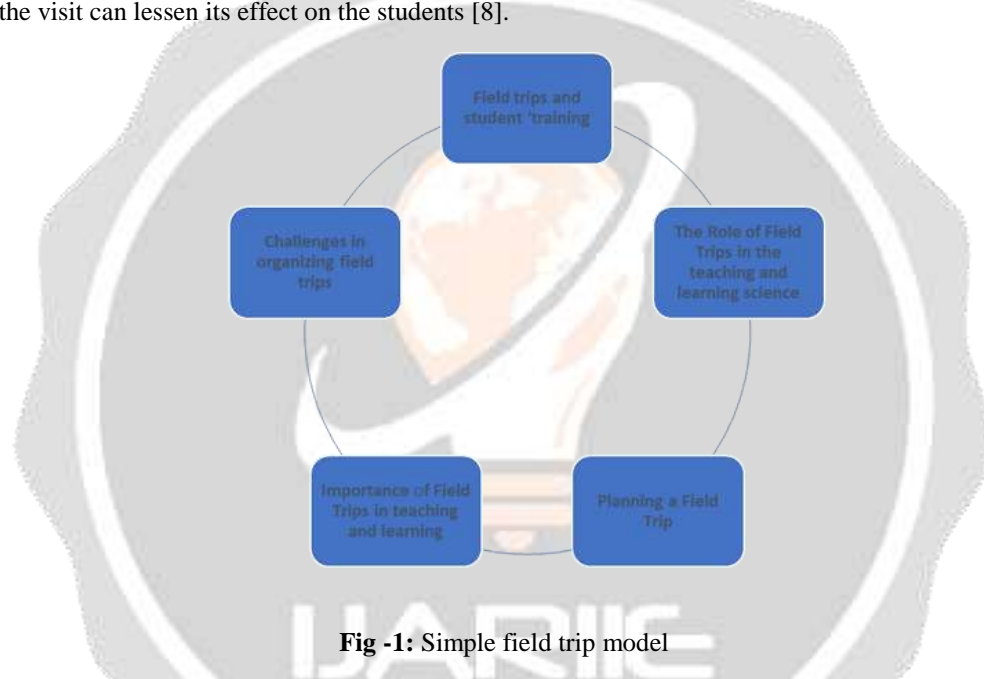


Fig -1: Simple field trip model

Science has also been described as a decision-making, skill-oriented topic that gives students the information and abilities to work for themselves while also making an impact on the socioeconomic growth of their families and communities [1]. Field visits can be seen as one of the methods of teaching science, along with formal classroom instruction, practical work, and demonstrations. A simple field trip model is illustrated in Fig -1.

2.1 Field trips and students' training

As proof of a long tradition in the history of education, field trips have always been a crucial teaching tool. According to a research by Behrendt and Franklin, educational field trips with an interactive environment that are typically organized by colleges have been found to improve learning [9]. For Behrendt and Franklin, the objectives of the field trip have not significantly altered through time [9]. They [9] assert that the field trip could help students become more analytical, interested in learning about science, and successful in doing so. The outdoors can be used for field visits to places like urban regions, museums, zoos, and natural systems. The field trip's main potential should be the chance for students to have real-world experiences by using: a stage of learning where concepts go from being basic to being complicated, a first-hand encounter with real phenomena and materials the capacity of practical activity for the development and elaboration of abstract ideas.

Field trips, as complex learning environments, allow for the integration of the cognitive and emotive components of learning as well as the tying of the curriculum to the environment. Field trips give us the chance to learn informally through observations, quick experiments, and group discussions. Although there are college-level courses with a

field component, most of them include lengthy field-laboratory exercises, even though they might provide a variety of learning activities outside the classroom [10].

2.2 The Role of Field Trips in the teaching and learning science

Oh and Nussli assert that the main purpose of field trips is to enable students to have first-hand experiences with real-world objects and phenomena [8]. Successful field trips will integrate classroom learning and add a fresh perspective to the college-level topic. For instance, when students visit a zoo, brewery, electronics store, etc., they will gain a fresh understanding of the material being studied in biology, chemistry, and physics. These students will comprehend the idea much more clearly and develop a fresh appreciation for the subject than they would have otherwise. There are a variety of observations that classroom learning can occasionally be detached from the actual world, with symbols and numbers typically lacking linkages to real-life experience, which are reinforced by Behrendt and Franklin, [9]. Even while tutors who lead field trips frequently distinguish between the two by failing to give students meaningful links to the curriculum, the goal is still for students to gain new knowledge. Studies regularly reveal that students have good views toward a range of field trips, and they also provide overwhelming evidence that directed learning on field trips may become a major factor in achieving educational objectives when done properly. By striving to blend the college curriculum with the students' field trip experiences, the tutors can potentially provide educational benefits to their pupils [11; 12].

Additionally, field trips have been studied over the years at all academic levels, from the fundamental to the college level. Less writing about field excursions comes from other places and more from museums and science centers. Field trips, however, can be taken to a variety of locations and occasions. Students studying integrated science can go on field trips to places like the Kakum National Park, brewing establishments, atomic energy facilities, soap manufacturing, and purification factories to gain a better understanding of daily events.

2.3 Planning a Field Trip

Finchum suggested that for a student to get the most out of a field trip, a tutor should think about asking students for suggestions on the site to visit, the best time to go, and what to wear when going after outlining some of the key concepts of the college year [13]. This is because, while being forced to participate in their education planning is a fantastic way to achieve this, students want to feel that they are actively involved in it. Students should also be familiar with the history of the location they would be visiting as well as the objectives that must be met there Finchum, [13]. The most crucial connection, according to Finchum, is to make between what students are learning in class and actual situations that are depicted in the curriculum. According to him, field visits in all circumstances only maximize learning when instructors actively incorporate the knowledge learned there into the course material. It is important to teach and practice appropriate field trip behavior in advance [14]. Both the principles of good behavior and scientific inquiry must be taught to students. Additionally, they need to observe the variety and quantity of materials required for the outing. Neeraja also suggested that when planning field trips, the pre-trip stage should include administration and instruction, getting approval from the proper administration, setting up transportation to and from the field trip location, getting in touch with the field trip location to confirming the schedule and activities and getting permission forms signed by college presidents before attending the field trip [15]. A good field trip depends heavily on preparation on the part of both the students and the tutors. As a result, before a visit, classroom instructors should try to get in touch with the locations they plan to visit. According to research, the key components of a field trip's educational success are the students' thorough preparation and the creation of a connection between the excursion and the curriculum [12]. Learning expectations for students will only be high if tutors also expect learning to occur, and students will be most prepared for the field trip when their tutors are educated and ready. However, according to Anderson *et al.*, while classroom tutors state that they think pre-visit preparation of students is important, they might not have the time or resources required to do so [16]. Students should be permitted to emphasize critical thinking while at the location [13]. Tutors can ask students to compare and contrast various exhibits or make predictions based on what they have witnessed, as opposed to just having them observe scenarios without asking questions or engaging in the research. Based on the destination, research has found that both self-guided and guarded tours are led by tour guides [8]. According to a report by Floberg, the success of a field trip depended greatly on the follow-up activities [17].

DeWitt and Storcksdieck, posit that students should be permitted to share the observations they made during the visit in the classroom by way of a class newsletter or another similar format [18]. By doing this after the visit, you may capitalize on the kids' excitement and memories of the trip while they are still fresh [8]. Tutors in the classroom may also let students ask questions about the excursion and then use the answers to gauge how much the students have learned.

According to Anderson *et al.*, if tutors are sincere about using the field trip as a learning opportunity, they must provide students the chance to expand on what they learned after the trip [16]. According to Davidson *et al.*, pupils are less likely to remember the experience's substance if it is not connected to subsequent learning [12]. This stage, according to Finchum, has two parts: a debriefing and a concluding action [13]. Students should be encouraged to share and discuss their field trip experiences during the debriefing session.

2.4 Importance of Field Trips in teaching and learning

Regardless of the location, field trip experiences can have a significant impact on students' views and beliefs. In their 2006 study, Braund and Reiss identified five advantages of learning outside the classroom. These are (i) enhanced conceptual learning; (ii) genuine practical work; (iii) introduction to "big" science (i.e., science performed on a large-scale using equipment that cannot be replicated in a laboratory); (iv) improved attitudes; and (v) social outcomes like collaboration and taking ownership of one's education [19]. Kisiel also maintained that field trips can foster interest and motivation in science and foster the development of scientific and social skills [20]. When students are exposed to actual circumstances rather than hearing about them from a textbook or guest speaker, they can sometimes develop a greater level of empathy [13]. An engaging and well-planned field trip can result in long-lasting learning. Field trips can be beneficial educational opportunities that test and enlighten pupils in ways that are not possible in a classroom. A field trip can provide students the chance to see and learn about things they might never have otherwise. Knowledge cannot be acquired in isolation within the college's walls in the actual world. A good field trip may give students, especially those studying integrated science, the chance to participate in hands-on activities and breathe life into otherwise dull subjects. Field trips can also offer enjoyable chances to practice information-gathering techniques in realistic settings. As they leave the classroom, they continue their training by learning how to observe and draw judgments. Morag and Tal, posit that a field trip can benefit students by offering them a personally meaningful experience and by promoting the ideas of other subject areas [21]. A field trip's worth can be observed in how it applies to a variety of abilities that students must learn. For instance, when students visit a park, hear the birds, and see their colors, they might be completely involved in a sensory experience. During a hands-on exercise, moving things includes another sensation. Students can learn much more about their town [13]. Students are better able to connect their academic work to real-world necessities when they can connect the knowledge, they bring to college with what they are learning in the classroom. Field trips can be a memorable approach to engage students in learning Even the limitations of a brief or one-time field trip can help many tutors realize the value of a planned field trip [22].

Field trips should be planned around specific educational goals, just like any other component of an educational program [23]. The participants should be able to quickly draw links between the field trip's emphasis and the ideas they are learning throughout the remainder of the educational program, they noted. Numerous studies in the field of scientific education have shown that taking part in carefully prepared field trips significantly improves students' factual knowledge and conceptual understanding.

2.4 Challenges in Organizing Field Trips

Several things have reportedly made it difficult for tutors to take their students on field trips, according to [24]. These include transportation issues, financial constraints, tutoring abilities in the planning process, the challenge of tying theory and practice together, time constraints on preparation due to the rigid curriculum, an absence of assistance from college administrations for field trips, poor student conduct and attitudes, as well as the inadequacy of resources and venue.

3. METHODOLOGY

The investigation was conducted using a descriptive survey design because the study's main goal was to describe how field trips were used to teach integrated science at Komenda College of Education. Descriptive research is frequently employed when there is already knowledge about the issue [25]. Additionally, it aids in identifying the nature of existing circumstances, routines, and attitudes; held beliefs; and ongoing procedures. As a result, it is the greatest strategy to use when describing how things happen. 240 students and 7 science tutors from Komenda College of Education, which offers integrated science as a course of study. The total sample size was 256 people in all. The study only included students who were in level 200.

Questionnaires were the major method for gathering data for the surveys, fortunately, the respondents were literate and needed little assistance in responding to the questions. A questionnaire with both closed- and open-ended items was used to collect the data. The surveys were divided into two forms (questionnaires for tutors and students). Items on the 4-point Likert scale ranged in strength from Strongly Agree (4) to Strongly Disagree (2) to Agree (3) and

Disagree (1). Four sections, A through D, made up the questionnaire. B-D relate to the study's research issues, whereas Section A discusses the demography of the Respondents

The students and tutors completed the questionnaire in a professional and timely manner. The information communication technology tutors from Komenda College of Education helped with the questionnaire administration. The participants received the questionnaire, which they were asked to complete and return. The questionnaire was completed, collected from the respondents, and then analyzed online. One week was used to mail the questionnaire to the participant, another week was used for their responses, and the remaining three weeks were used for data collecting.

After editing and coding, descriptive statistics were used to examine the research data. The results were then presented as pie charts and percentages. The weighted averages of the statements on the four-point Likert scale were used to get the means for each statement. The results were compared to 2.5 to determine whether the idea was ultimately agreed upon (2.5 and above) or not (below 2.5).

3.1 Results and Discussions

The research begins by looking at the tutors' backgrounds, including their ages, the highest academic degrees obtained, and the number of years of teaching experience. There were 7 men and 2 women among the 9 tutors that took part in the study. The fact that their ages ranged from 40 to 55 suggested that they were reasonably active and ought to be able to plan field trips for their students. Regarding the highest degree the tutors had earned, it was discovered that one (33%) was enrolled in a Ph.D. program and four (66.7%) held second degrees in various fields. Given their extensive education, it was believed that the tutors would be well-versed in the value of field trips as a teaching and learning strategy. They all had teaching experience ranging from three to ten years, showing that they were all seasoned tutors and probably had a good understanding of the significance field trips play in the teaching and learning of science. The students who answered the questions were 128 of which 41.4% were female and 58.6% were male indicating that the males are more than the females in science class.

The respondents were first asked to describe what such a field trip was and how frequently they had gone on field trips before they were asked to indicate if they knew about the role field trips in the teaching and learning of science. All 9 instructors and 128 students agreed that when a field trip is integrated, students are engaged fully in achieving the learning objectives and this is in line with Behrendt and Franklin's definition [9]. The data in Fig -2 shows the degree to which respondents see the role of field trips in the teaching and learning process.

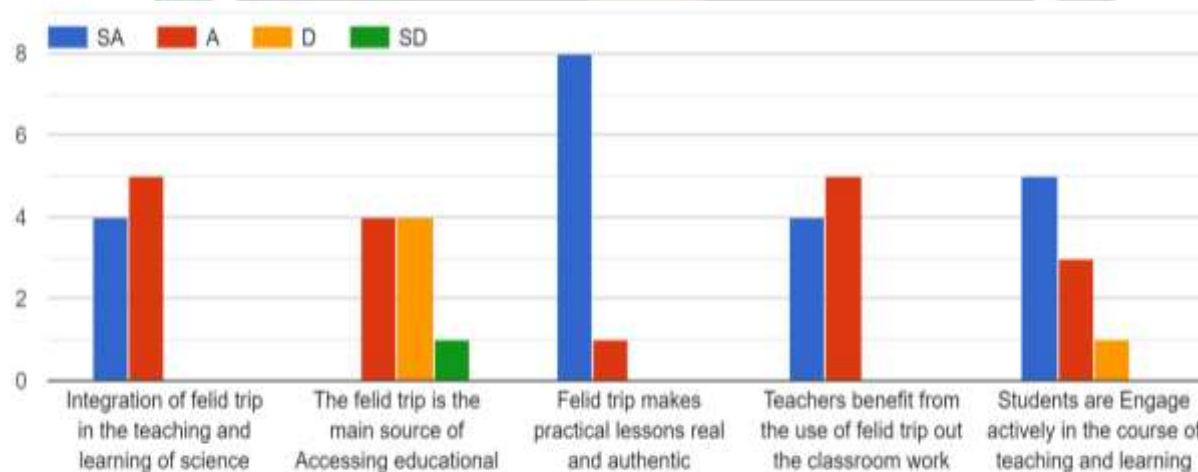


Fig -2: The Role of Field Trip in the Teaching and Learning of Integrated Science

Respondents Strongly Agree that field trips enhance students' understanding and interest in the teaching and learning of integrated science. Field trips provide opportunities for observing and making conclusions in practical lessons. Field trips aid students in better comprehending real work, learning attitudes are improved through field trips for students, Field trips give students the chance to practice teamwork, field Trips encourage students to learn more on their own, Field trips push students to work hard in class, Field trip provides possibilities for active class participation, Field trip assists students in selecting their future professions. This finding demonstrates that the tutors shared Behrendt and Franklin's assertion that integrated science is a decision-making, skill-oriented subject that gives students the knowledge and skills they need to use as tutors once they graduate from college [9].

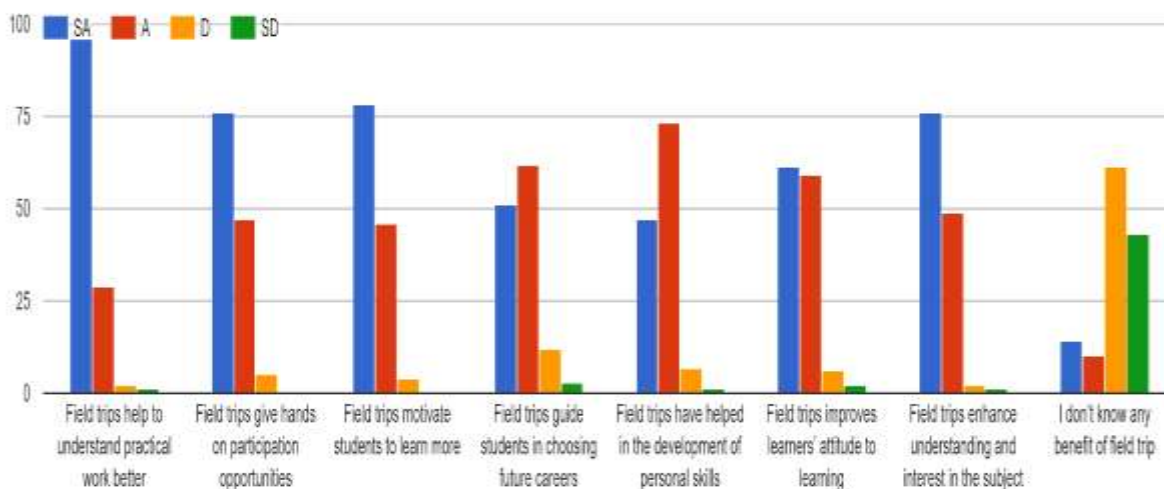


Fig -3: Participants’ responses on the Importance of Felid trip in the Teaching and Learning of Integrated Science

Based on Carroll’s issues, a question was posed to determine the difficulties that respondents saw as impeding the usage of and planning for field trips by the tutors [3]. The college administration's inadequate support in terms of transport and motivation for facilitators, loaded curriculum and its associated limitations on time and other parameters that enhance field trip events, time concerns that interfere with the college schedule, Poor resource allocation and venue selection from the data collected.

Responses to questions about the difficulties in planning and using field trips for the Integrated Science program are shown in Fig -3. Since the means for both sides were higher than 2.5, both students and instructors agree that there were difficulties. The claim that their tutors lacked the expertise to employ field trips as a teaching strategy was one with which the students agreed. The organization and usage of field trips in teaching and learning, particularly in skilled training programs, depends heavily on the abilities of the tutors, the gap between theory and practice, and the perceived inertia of the following were the assertions that were supported by both students and instructors and were thus regarded as actual obstacles to the planning and usage of field trips for the teaching and learning of integrated science.

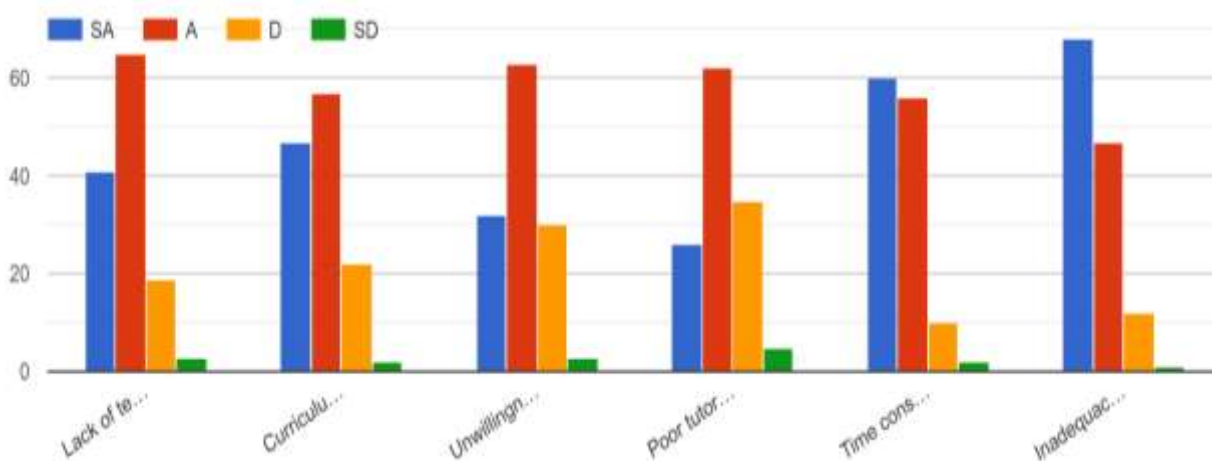


Fig -4: Challenges in the Organization and Use of Field Trips in the Teaching and Learning of Integrated Science

3.2 Key Findings

The primary conclusions from the analysis were as follows:

1. Field trips enhance students' understanding and interest in the learning of integrated science and the pursuits of their careers.
2. Field trips provide opportunities for observation, analysis, drawing of conclusions and improving the attitudes of students
3. The college administration's inadequate support in terms of transport and motivation for facilitators.
4. Loaded curriculum and its associated limitations on time and other parameters that enhance field trip events
5. When students are well involved in the planning and they are briefed on what to expect during the field trip, organizing it would go a long way to effect the necessary change in the behavior of students where they will find it difficult to understand basic science concepts in their way.
6. In as much as college admiration is involved in the planning, there should be proper monitoring of how it is carried within the semester and get report from the tutors indicating how things were after the trip.

4. CONCLUSIONS

The researchers concluded that using field trips in the teaching and learning of integrated science has the potential to affect students' and tutors' levels of understanding during the actual field trips, where students may construct new ideas based on what they would have imagined from the theories taught in the classroom. The results of this study were consistent with earlier research because Oh and Nussli demonstrated that field trips act as a concrete transition from more concrete to more abstract learning levels, making them an essential component of the teaching outcome rather than a summary of enrichment activities in the classroom [8]. The researchers concluded that using field trips in the teaching and learning of integrated science has the potential to reinforce and improve students' and tutors' levels of understanding. students in constructing new ideas which is based on what they have imagined from the theories taught in the classroom.

5. RECOMMENDATIONS

The following recommendations were given in light of the study's findings and the inferences that were drawn.




1. The management of Komenda Colleges of Education should specify the procedures and streamline the processes for granting permission and more so, avoid bearing unnecessary costs in the organization of field trips.
2. When deciding whether to go on a field trip, management, students and tutors should all be involved in the decision-making process.
3. The field trip should be reviewed in class before it starts to arouse students' interest in the trip.
4. Field trips should be introduced as part of the lesson, with a focus on the field trip's objectives.
5. Tutors should emphasize the importance of using field trips to engage students in science learning and teaching when there are insufficient resources and an undesirable location for practical activities


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BIOGRAPHIES (Not Essential)

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	<p>Mark Prince Kwamena Eghan is a renowned Chemistry Tutor with enormous experience in teaching at all the various levels of the educational system – from the Basic level to the Tertiary level. He is a professional teacher whose training started at Jasikan Training College (now Jasikan College of Education) through the University College of Education of Winneba (UCEW) to the University of Education, Winneba (UEW). He holds B.Ed. (Science Education) from UCEW</p>

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