

EFFECTS OF FIELD STUDY ON STUDENTS' LEARNING GEOGRAPHY IN SELECTED SECONDARY SCHOOLS IN KENYA.

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ABSTRACT

The purpose of this study was to establish the effects of field study on students' learning Geography in public secondary schools in Bungoma County. The performance in geography has steadily dropped raising concern on the teaching methods used. The study was guided by the following objectives; to establish the extent to which field study influences students' participation in physical geography lessons in public secondary schools and to identify the challenges in the use of field study in the teaching and learning physical geography in selected public secondary schools in Bungoma County. Systematic random sampling technique was used to sample the study schools. The sample size comprised of 81 teachers of geography and 81 heads of geography department purposively sampled from selected public secondary schools. 188 form three students were selected using a mathematical formula (minimum 10% of the total population) as postulated by Mugenda and Mugenda. The study used a set of questionnaires, interview schedule document analysis to obtain data. Data was analyzed using descriptive statistics. Chi-square values and results were recorded using tables. The study findings showed that there was a significant relationship between field study and students' participation in physical geography. Findings also revealed that there was no relationship between challenges and using field study in teaching physical geography in public secondary schools in Bungoma County. The study recommends that policy makers should emphasize application of learner centered methods. School management, teachers of geography, parents and other stakeholders should support the use of field study in the teaching of geography.

Key Words: *Effects, Field Study, Geography, Learning.*

1.1 Introduction

The purpose of education is to develop knowledge, skills, and character of students. This process is not restricted to school, classroom or text books (KICD Syllabus, 2002). According to Sampath (2006), the term field study is usually used when a person or a group of persons under take a study tour to places where they expect to have a change from normal classroom routine, as learners interact with the built or natural environment. When educational field studies are undertaken by students, the main objective is to gain additional knowledge through direct experience that will bring about active learning while dealing with concrete material. Nabors (2009), says that school learning should be authentic and connected to the world outside of school not only to make learning real but also to develop the ability to apply knowledge in real-world setting. He adds that field study brings about

understanding of the processes underlying geographical patterns in space and time. Tal and Morag (2009), describe field study as students' experiences outside the classroom at the interactive locations designed for educational purposes.

Nabors (2009), observes that a field study is known as school trip in the UK, New Zealand, Philippines and school tour in Ireland. It is a journey by a group of people to a place away from their normal environment. Whatever the purpose, field studies are learning experiences that bring about practicing and application of technical skills. Orien (1993), argues that field study can allow all types of learners to excel in acquiring knowledge in a subject, skills and building confidence for further learning, hence the learning from known to unknown. Learners from disadvantaged backgrounds will have an opportunity to make mental structures and experience places and events otherwise unobtainable to them while in a restricted classroom constraint. Orien adds that field study lessons bring about direct experience with concrete phenomena and materials. Michie (1998) outlines the following as the purposes of conducting field studies: "Provide first-hand experience to the learner hence better performance in evaluations and change of attitude. Stimulate interest and motivation in physical geography thus retention of learned matter. They add relevance to learning and interrelationships among disciplines that promote transfer of learning and finally to promote personal development that enables learners to perform better in assessments and application of skills acquired."

The students' performance in Geography at the end of the secondary school course has not been satisfactory for the last five years (KNEC 2011-2015). This raises a question among teachers and students as to why performance in Geography remains low year after year. Improving the performance of Geography education is a great societal need in Kenya not only for industrialization of the country as contained in the vision 2030, but also for ensuring food security in the country through practices like land reclamation and irrigation farming. The challenge thus has been how to make Geography more "alive", more "real" and more manageable by secondary school students. It is, therefore important to examine the way the performance in this subject can be improved in our secondary schools. One of the most interesting aspects of concern in geographical education has been the role of field study in enhancing geography learning in recent times. It is strongly argued that "Field studies are central to the ethos, culture and pedagogy of Geography" (Jenkins, 1997; Clark, 1996) and this study believes that the role and purpose of field study in aiding geography learning should be carefully considered when planning such activities. The contribution of field study to physical geographic learning is evidenced by the fact that in Kenya, observations of field study have indicated clearly that high achievement in physical geography in secondary schools is linked to a high profile for field study in the curriculum (Smith, 1997). It was based on these observations that the study sought to integrate the adoption of field study in physical geography teaching. It was therefore for this reason that the research study sought to establish the effects of field study on students' learning in geography in public secondary schools in Bungoma County, Kenya.

1.2 Statement of the problem

Aydin (2011) notes that methods used in teaching geography are generally inefficient. Students can not apply what was acquired. Mostly teacher-centered methods are used. Learners don't participate. There is empirical proof that instructional methods adopted by

teachers influence learning achievement significantly (Mukwa, 2002). Whereas appropriate instructional methods would facilitate grasping of new concepts, inappropriate methods are likely to constrain knowledge retention and application (Bungoma County Director Education, 2011 -2015). In Kenya and especially in Bungoma County, students' performance in physical geography has been poor and does not show any trend for improvement. For the last five years the subject has had a mean score of less than 5.0 (mean grade of C) and below (Bungoma County Director Education, 2011 -2015). The dismal performance as shown in the mean score for the subject causes a lot of concern on the method of teaching of physical geography in Bungoma County. From the MOEST, it has been observed that the poor performance in the subject may be due to inappropriate teaching methodology adopted by the teachers (MOEST 2016).

According to the Kenya secondary school syllabus, emphasizes the application of learner-centered approaches and making relevant utilization of field-work techniques in studying geography (KIE 2002). It is against this background that the current study sought to find out the effects of field study on students' learning in physical geography in selected public secondary schools in Bungoma County, Kenya.

1.3 Research objectives

The study was guided by the following objectives;

1. To establish the extent to which field study influences students participation in physical geography lessons in public secondary schools in Bungoma County.
2. To identify the challenges in the use of field study in the teaching and learning physical geography in selected public secondary schools in Bungoma County.

2.1 Field Study and Learners Participation in Teaching of Physical Geography

The role of field study is expansive as illustrated by Smith (2011), who comments on its applicability as;

“There remain important questions about local knowledge, including how such knowledge is constituted by relationships and networks that go beyond the local, how such knowledge is learnt and (re)produced in time and space, and how the knowledge of those marginalized areas is used”.

According to the UNESCO (2001) through field study geographers were taught wide ranging combination of skills drawing on ideas from many resources. This ability to view issues from a wider perspective was appropriate for working in many different areas. The role of field study as Kimayu (2012), said was observed as it enlightened learners about the physical world and the environment. He substantiates by stating that it provided them with exact and recognized knowledge of the distribution of phenomena on the earth surface. The Joint Admission Board (JAB) (2002) gave the connection between geography course and the type of people employers wanted. Employers wanted people with good communication skills, people who could work as a team and were able to collect data and analyze their work. This in essence could be achieved by exposing learners to field studies. Technically, geography courses include a wide range of written, oral presentation and field

work in which students work in groups. This aspect of field study develops social fabrics and attitudes among the learners which is the wholesome aim of field work.

Armstrong (1989) argued that field study helped learners to develop skills for future careers by enabling learners become independent during field study lessons. Hence, to him, it helped people to learn skills needed to find important information on their own such as locating places, following directions, describing regions and using sources to find geographic facts which could be used in their training to help them in one of the jobs for example Cartographers and Surveyors, City planners, Computer Specialists, Traffic Supervisors, Aerial Photographers, Meteorologists, Real Estate Managers and Park Rangers. Therefore, the skills that one gets from field work studies make an individual to attract a wide range of employers. For example, working with aid agencies, environmental work using Geographical Information system [GIS], working for the census office and in information and recreation.

2.2 The rate at which field studies are conducted in physical geography in secondary schools in Kenya

Instructional methods influence achievements of students in the education continuum. While, appropriate methods enhance students' learning achievements, inappropriate instructional strategies stifle knowledge retention and application (Watson, 2013). In Kenya, the Sessional paper No. 1 of 2005 on Policy Framework for Education, Training and Research, amplifies the government's commitment to enhance quality education at all times to produce people with adequate knowledge and skills to meet the objectives of vision 2030 and millennium Development Goals (MDGS) (GOK, 2005).

Students' persistent poor performance has been partly ascribed to inadequate teaching and instructional methods adopted by Social Science teachers (Chang, 2010). Persistent use of traditional mode of instruction is identified as one of the major short-comings affecting the learning and higher achievements in social science subjects. The traditional methods of teaching geography are lecture and book recitation. Geography as a social science is a bulky subject. Teachers usually adopt lecture method in teaching in order to cover the syllabus within the stipulated time. This does not give room for proper understanding and mastery of the subject matter (Chang, 2010).

There is empirical proof that instructional methods adopted by teachers influence learning achievement significantly (Mukwa, 2002). Whereas appropriate instructional methods would facilitate grasping of new concepts, inappropriate methods are likely to constrain knowledge retention and application (Zeeb, 2004). Consequently, it is important for teachers to align their instructional methods with the needs and preferences of students to enhance effectiveness of the process in terms of learning achievement. Students whose learning preferences are incompatible with instructional methods, are less likely to develop interest in the subject matter, prompting some to drop out altogether (Odundo, 2003).

The discussion method is now used by some teachers in teaching social sciences. However, some of the teachers use a combination of both lecture and discussion methods. But a

widely used method in geography teaching is the discussion method. Teachers prefer this method in geography at secondary school level as it promotes positive attitude and develops interpersonal skills (Froyd, 2007). Conversely, employing discussion in teaching is better suited when goals are oriented more towards changing behavior and acquiring new skills or approaches to problem solving. He adds that for improved academic performance, field studies play a bigger role as they promote retention of content.

Teaching methods and techniques based on pragmatist teaching approach within a student-centered learning environment have been widely accepted. Active learning which can be placed within the pragmatist approach to student learning has been perceived as a shift from traditional instruction and has received much attention over the past several decades (Prince, 2004). Active learning done through field study is a teaching approach in which learning is encouraged by actively engaging with the learning process in the field, or simply put, learning through doing. He emphasizes students' inquisitiveness, practical orientation, critical thinking, and skills acquired while investigating, interpreting and synthesizing data (Prince, 2004).

The active learning is characterized by authentic learning tasks, collaborative learning, limited direct instruction from educators and self-initiated individual learning activities. Many techniques can be used to involve students; including field studies, experimental learning, co-operative learning, problem solving, case study methods, peer teaching among others. This may depend upon that particular situation, objectives and upon what is being taught and level of students.

2.3 Challenges posed by use of Field Study in the teaching of physical geography in selected public secondary schools in Kenya

Jones (2013), says that the use of educational field study has long been a major part of the educational programming for learners. However, due to funding limitations, time constraints, and increased liability concerns, many education professionals shy away from requesting for field lessons outside the class and school environment. In spite of these concerns, well-planned field study can be a valuable tool in the strengthening of learners' participation that may lead to improved performance.

Current issues such as standardized universal curriculum, lack of funds and overloaded schedules have forced many teachers to forego field study. In their place, most teachers have resorted to using the virtual fieldtrips (VFTs) via some form of internet or distance learning network which is not a replacement of real field study. Michie (1998), identified seven barriers to successful field study: 1) transportation; 2) teacher training and experience; 3) time issues such as school schedule and teacher's ability to prepare; 4) lack of school administration support for field studies; 5) curriculum inflexibility; 6) poor student behavior and attitude; 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. Teachers need to determine the logistics to transport students. Large introductory classes (form 1 and 2) 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 study in order to maintain a level of control that will allow for participation and 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 location. Upon arrival at a field study 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). Finding time for the field study and making arrangements for students, who cannot make the outings on their own, may only happen depending on the teacher's attitude and school programmes. Teachers need to determine logistics to transport students. Large and fairly new classes present unique challenges due to the need of larger transportation infrastructure, safety issues, feeding programs, more logistical planning and time lost trying to organize the learners (Hudak, 2000).

It calls upon the teacher to prepare the students for the field study in order to maintain a level of control that will allow for learning to take place when students are at the venue in the field. Kalvaitis (2007) observes that often, the educators' major fear is losing control of the students once at the field study destination. On arrival at the trip venue, students are often disoriented resulting in excited, explorative and unrestrained behavior. Therefore, the teacher should be prepared to focus on students' mental and physical power towards active participation at the venue (Lei, 2010).

Teachers have little training or pedagogical knowledge relating to the process of field study planning and preparation (Michie, 1998; Tal and Morag, 2009). Pre-service teachers experience a field study during each clinical classroom observational visit, and it is not unusual if the pre-service teacher went on a field study 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 study (Kisiel, 2006; Tal, 2004).

Smith (2011), 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).

3.1 Methods and methodology.

The study used descriptive survey research design which described the state of affairs, as they existed. This approach was appropriate because the study involved fact findings and inquiries of the relationship between use of the field study and performance in teaching and learning Geography in the area under study. It aimed at obtaining information from a representative selection of the population from which the investigator presented the findings as being representative of the population as a whole. According to Orodho (2005), descriptive survey studies were designed to obtain pertinent and precise information concerning the current phenomena and where possible draw valid general conclusions from

facts discovered. The techniques that were used in the field were both qualitative and quantitative.

This study employed the systematic random sampling technique to sample the study schools appropriately. Purposive sampling was used to select the sub-counties from which data was collected. Again, purposive sampling was used to select the school 81 HODs and 81 teachers of geography who totaled to 162. The sample size for students was 188 selected using a minimum 10% of the total population as recommended by Mugenda & Mugenda, (2003). It was assumed that HODs and Geography teachers had the necessary information concerning the teaching of geography using field study as a strategy. The research instruments used in this study were basically questionnaires and an interview schedule.

4.0 Findings and Discussion.

The study provides results and discussions which were based on the two major research objectives of the study namely: To establish the extent to which field study influences students participation in physical geography lessons in public secondary schools and to identify the challenges in the use of field study in the teaching and learning physical geography in selected public secondary schools in Bungoma County. For the purposes of this preliminary analysis, descriptive and chi-square analysis was used to describe the general characteristics of the data collection.

4.1 Relationship between Field study and Students' Participation in Physical Geography Lessons in Public Secondary Schools

The first objective sought to determine the extent to which field study influence student participation in physical geography lessons in public secondary schools in Bungoma County. It was likely that field study in geography could enhance students' performance in physical geography. The following themes were established under this objective; the relationship between field study and students' participation in physical geography and the relationship between the use of field study and students' perception towards geography in public secondary schools in Bungoma County. In this study, chi-square model was used to analyze the relationship between field study and students learning of Geography in public secondary schools in Bungoma County. This method was used because it's flexible and can forecast dependent variable from a set of predictors that may be discrete (Fabowales, 1995). The study, sought to establish the effect of field study on students learning of Geography in public secondary schools in Bungoma County. Thus each variable was analyzed individually at a significance level of 0.05.

4.1 Field Study and Learners' Participation in Physical Geography in Public Secondary Schools in Bungoma County

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Table 4.1 Relationship between Field Study and Students' Participation in Geography Lessons in selected Public Secondary Schools in Bungoma County

Field Study	SA		A		U		D		SD		TOTAL		χ^2
	f_o	f_e											
f_e	N												
Enhances students interaction with environment	28	34.2	40	41.0	18	18.4	35	42.2	27	32.2	168	9.19	
Enables students to learn practically	33	34.2	50	41.0	15	18.4	39	42.2	31	32.2	168	2.93	
Enhances students' knowledge retention	46	34.2	54	41.0	12	18.4	32	42.2	24	32.2	168	15.0	
Good relationship with teachers	44	34.2	37	41.0	21	18.4	51	42.2	15	32.2	168	14.6	
Field studies are time wasting	20	34.2	24	41.0	26	18.4	54	42.2	44	32.2	168	20.4	
Total												62.1	

$$\chi^2 (16, N=168) = 62.1, p < .05$$

As portrayed from table 4.6, the results indicated that there was a significant difference between field study and students' participation in geography Lessons in public secondary

Schools in Bungoma County. [χ^2 (16, $N=168$) = 62.1, $p<.05$]; the difference between observed and expected values under the null hypothesis were very inconsistent and therefore a large discrepancy resulted in a large value for chi-square thus data did not fit the null hypothesis. The hypothesis was rejected in favour of the alternative hypothesis because there was statistically a significant difference between field study and students' participation in geography lessons in selected public secondary schools in Bungoma County among students. Therefore, field studies are relatively important in determining the learners' participation in Geography lessons. Teaching methods and techniques based on pragmatist teaching approach within a student-centered learning environment should be widely employed. rejected in favour of the alternative hypothesis because of perfect agreement in relationship between field study and Students' perception towards geography in public Secondary Schools in Bungoma County.

4.2 Challenges posed by Use of Field Study in learning Physical Geography in Public Secondary Schools in Bungoma County

CHALLENGES

Syllabus Coverage	43	55.0	48	43.5	24	25.5	35	26.0	150	6.1
Planning Logistics	57	55.0	42	43.5	29	25.5	22	26.0	150	1.6
Available Funds										
Travel Risks	64	55.0	41	43.5	23	25.5	22	26.0	150	2.4
Total	56	55.0	43	43.5	26	25.5	25	26.0	150	1.07
										11.17

Source: Field Data 2016

therefore a large discrepancy resulted in a large value for chi-square thus data did not fit the null hypothesis. The hypothesis was rejected in favour of the alternative hypothesis because there was statistically a significant difference between field study and students' participation in geography lessons in selected public secondary schools in Bungoma County among students. Therefore, field studies are relatively important in determining the learners' participation in Geography lessons. Teaching methods and techniques based on pragmatist teaching approach within a student-centered learning environment should be widely employed.

The challenges posed by use of field study and the learning of physical geography in public secondary schools in Bungoma County. The findings showed that there was no significant difference between challenges posed by use of field study and the learning of physical geography in public secondary schools in Bungoma County, [χ^2 (9, N=150)=11.17, $p>05$]; the difference between observed and expected values under the null hypothesis were small and therefore a small discrepancy resulted in a small value for chi-square and therefore data fitted the null hypothesis hence the hypothesis was retained because of imperfect agreement in relationship between challenges posed by use of field study and the learning of physical geography in public secondary schools in Bungoma County among students.

5.1 Conclusion

Concerning the effect of field study and students participation in physical geography lessons in public secondary schools in Bungoma County; it can be deduced that there was a significant difference between field study and students' participation in learning of physical geography in Public Secondary Schools in Bungoma County. Therefore, field study encouraged students' participations in the learning of physical geography in the study schools.

The study sought to determine the challenge posed by use of field study and learning of physical geography in public secondary schools in Bungoma County. The findings showed that there was no significant difference between challenges posed by use of field study and the learning of physical geography in public secondary schools in Bungoma. The findings of this study are similar to earlier studies which stated that finding time for the field study and making arrangements for students who cannot make the out-door lessons adds tasks to the already busy teacher's diary. Teachers need to determine logistics to transport students. Large and fairly new classes present unique challenges due to the need of larger transportation infrastructure, safety issues, feeding programs, more logistical planning and time lost trying to organize the learners (Hudak,2003). Kanyimba (2002), revealed that field study as an instructional technique, is hardly utilized in most Namibian secondary schools.

5.2 Recommendations

On the basis of the findings and conclusions above, this section presents the recommendations of the study.

Firstly, teachers should adopt field study as a method of teaching physical geography since students enroll more for geography where field studies are conducted often. Research suggests that field experiences may have great influence on students understanding of concepts taught in class as it brings about desirable learning in students. In this regard, students develop appropriate knowledge and skills, which are necessary for solving problems and bettering human life styles.

Fourth, the schools should adopt a strategy of planning field studies as this can be a valuable tool in the strengthening of learners' performance in physical geography. The use of educational field study has long been a major part of the educational reforms for learners. Therefore, school management should budget for field studies as a major component in the teaching of physical geography.

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