



INFLUENCE OF APPLICATION OF FIELDWORK TEACHING STRATEGY ON LEARNING AND PERFORMANCE OF LEARNERS IN GEOGRAPHY IN PUBLIC SECONDARY SCHOOLS IN NYAKACH SUB-COUNTY, KENYA

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ABSTRACT

Geography is a hands-on, minds-on subject which ought to be taught using interactive strategies like fieldwork for better performance. In Kenya, stakeholders are concerned about the way geography is taught in secondary schools in Nyakach due to perpetual declining performance. This study sought to examine the influence of utilization of fieldwork teaching strategy on learning and performance of learners in geography in public secondary schools in Nyakach. The study was underpinned by the social constructivists' theory of learning which postulates that knowledge is believed to be constructed by individual learners in a social setting. The conceptual framework was based on the effect of independent variable (fieldwork) on the dependent variable (learning and performance in geography). Mixed methods approach was used. Concurrent triangulation design was utilised as both quantitative and qualitative data from various sources and contexts were compared and verified. The study used proportionate stratified, purposive, simple random and saturated sampling to arrive at various sample sizes. Data was collected through questionnaires, interviews, observations, focus group discussions and document analysis. Data obtained were coded for analysis using the Statistical Package for Social Sciences (SPSS) version 29. Quantitative data were analysed by descriptive statistics; frequency distribution, percentages; and means were used to draw inferences based on findings. Qualitative data were subjected to thematic analysis. The main findings of the study were that: 38.3 % teachers use field work while 61.7% do not use it. Interviews and FDG's emphasized that fieldwork was scarcely used hence limiting learning of geography. Conclusion is that field work is underutilized thus negatively affecting the instructional process. Teachers ought to use fieldwork optimally during instruction to help learners understand geography better hence attain higher results. These findings may be useful to stakeholders to fund and organize more field trips for students to improve learning and performance in geography.

KEYWORDS: Influence, Application, Field Work, Strategy, Teaching, Learning, Geography

INTRODUCTION

Fieldwork is one of the strategies that is central to effective teaching of geography in schools. The strategy involves a study or research that is conducted in the real world 'out there' rather than within the bounds of a classroom, laboratory or library. Hudak, (2003) while recognizing the importance of field work in exposing learners to realistic, interesting and interactive learning experiences, emphasized the foundational role the subject plays to other courses such as geoscience and biogeography among others. According to (UNESCO,2001) through field work, geography students are taught a wide ranging combination of skills, and offers (Lambert and Reiss,2016) diverse benefits which include conceptual, cognitive, procedural and social gains much of which would be lost without opportunities that fieldwork alone provides. Fisher and Binns (2016) assert that Geography is a practical discipline comprising map work, field work and quantitative methods which are not only part of the three traditions of the subject (Haggett, 1990) but also constitute its

practical and experiential aspect. It is highly unconscionable that students will understand the subject if they are mainly taught by expository techniques which are basically teacher centred.

Instructional Strategies (Online,2013) defines a field-trip as a study tour or visit taken outside the classroom to obtain direct experience from the natural setting and to improve student's interest in learning for collecting data, materials or objects outside the classroom as well as to observe objects or phenomena not possible to bring within the classroom. Field-trips involve the entire class visiting a point of instructional interest, termed a field, for instance, a river, farm, meadow, lake, ocean, mountain, factory or settlement, for purposes of obtaining knowledge. Field-trips provide opportunities for students to observe and directly study concepts of instruction in their functional setting (Estawul, Sababa & Filgona, 2016). The centrality of field-trips in Geography instruction cannot be overemphasized. It enables students to study and evaluate geographic phenomena in their



natural settings, leading to development of skills such as observation, recording, data analysis and interpretation, and ability to use information for problem solving (Fisher & Binns, 2016).

Wiley and Humphreys (1985) have suggested that abstract topics and higher-level concepts are easier to teach in the field relative to the class. Mwangiru and Njue (1985) point out that fieldwork enables contact with materials and features that make life what it is in any given locality. Senses are gateways to acquire knowledge and that the natural way to learn is principally through the employment of all the senses. The sense of sight is the most vivid and provides rich experiences to the individual. This can be employed by teachers through carrying out fieldwork activities. Wamutitu (2012) notes that Geography education encourages students to study and interpret the phenomena in their environment, and this can be made possible through fieldwork. Geography as a social science is a bulky subject and requires that students conduct fieldwork on most of the topics so that they can grasp abstract concepts as they learn directly from nature. The role of field work, according to Kimayu (2012), is to enlighten learners about the physical world and the environment.

Effective utilization of fieldwork in geography involves several phases in which both the teacher and learners ought to perform a series of activities both inside and outside classroom context. According to Kent (2020) a well thought out fieldwork teaching strategy constitutes five main steps as follows. First, there is planning and preparation phase by both teachers together with the learners, which involves selection of study area, reconnaissance, formulation of research questions or hypotheses and determination of data collection methods. Here, learners work closely with the teacher to derive a suitable study topic, objectives and as well conduct prior reading on study area so that they familiarize with relevant content. The second phase involves actual collection of primary data in the field by use of varied instruments such as questionnaires, observation, interviews to mention but a few. At this stage, learners are expected to engage in several collaborative and experiential activities such as conducting interviews, observations and collection of specimen that are relevant to the study. The third stage constitutes data analysis during which learners may receive guidance from teachers to apply various tools, graphs, or procedures in case of qualitative data to collate information derived from the field. The next stage is interpretation of data which involves learners providing explanations for occurrence of observed patterns in the field and relationships in collected data. Next in line is presentation and reporting of findings, an activity that exhibits results of team work and accountability. The last phase according to Kent (2020) is that of follow-up of the fieldwork experience which involves activities such as displaying specimen or even sharing of field information by learners in their groups as a way to consolidate all the other previous steps. It is noteworthy that the foregoing steps are rife with practical, minds-on, hands-on activities such as collection and analysis of data, drawing, taking measurements, observation, deriving and sharing information,

photography, video-taping –activities which are capable to not only make learning meaningful and realistic but enhance learner interest, understanding and performance in geography.

There are many scholarly works across the world that have addressed the way fieldwork is used in geography instruction. Such works include Fuller et al, (2011); Falana(2015); Eze(2021); Tanyanyiwa (2021); Gantait (2022) all decry the state of fieldwork as a teaching strategy in schools. More specifically, Fuller et al, (2011) in their paper, addressed the assumptions on the effectiveness of fieldwork as a mode of learning in geography. While bemoaning the place of fieldwork in the teaching of geography they (Fuller et al., 2011) implore that there is a need for rigorous research to unveil not merely the value but much more to investigate the role fieldwork plays in student learning so as to answer the question on how it is utilized as a strategy for instructional purposes. As if in response to the foregoing plea, the current study readily sets in to explore the influence of use of fieldwork in the teaching and learning of geography.

Simonyi and Karoly, (2020) conducted a comparative study of methods of teaching geography in different types of schools in Hungary. This was a survey research which sought to collate opinions of geography teachers on their practical experiences with various methods including fieldwork during geography instruction. The study revealed that application of diverse methods resulted in acquiring in a deeper knowledge in geography. In addition, Boyle et al., (2007) conducted a study on effectiveness of field courses in geography in United Kingdom's institutions of higher learning. The study focused on fieldwork's influence on adoption of effective approaches to learning in the affective domain and revealed that there exists significant effects. The focus of the foregoing study is on effects of fieldwork on the affective domain which is but a single learning domain (affective) excluding others, such as cognitive and psychomotor. The current study encompasses all domains that underpin teaching and learning processes.

Further still, Ballang and Ababio (2024) conducted an evaluative study on the role of fieldwork in quality teaching and learning of geography in senior high schools in Upper West Region, Ghana. Using mixed methods approach, with sample population of geography teachers and students totaling 360, the study revealed that fieldwork was recognized as pivotal in geography education even though its implementation was characterized by several setbacks including limited time set aside for geography; low funding; and inadequate administrative support among others. Another study by Tenha (2019) was on assessment of effectiveness of fieldwork in the teaching and learning of geography at Rukariro secondary school in Zimbabwe. A study by Obote and Milupi (2023) investigated methods teachers use to teach geography field work in selected secondary schools in Ndola District of Zambia and found out that though teachers were exposed to a variety of teaching methods during initial training, few of these methods were in use in schools. It is further revealed that instead, teacher centred methods especially lecture and note



giving methods were rampant contrary to learners' preference for fieldtrips, group discussions, pair work, debate and role-play.

Purpose of the Study

The purpose of this study was to assess the influence of application of field work teaching strategy on, learning and performance of learners in public secondary schools Nyakach Sub-County, Kisumu County, Kenya.

Research Hypothesis

There is no relationship between influence of application of field work teaching strategy and teaching, learning and performance of learners in Geography in Public Secondary Schools in Nyakach, Kisumu County Kenya.

METHODOLOGY

Research Design

This study comprised both quantitative and qualitative data and hence adopted a mixed methods approach because (Almeida, 2018), avers that this approach in research combines both quantitative and qualitative methods into a single study in order to provide a broader and more complete vision of a problem (Creswell, 2014). Specifically, the concurrent triangulation design explained by (Koskey and Stewart, 2013) was applied in this study because it capacitated the researcher to obtain different but complementary data from various respondents (QUASO, Heads of Humanities Department, Geography teachers and students of geography) on the same topic using different data collection methods such as questionnaire, interviews, discussions, lesson observation (Almeida,2018);at different times, locations and contexts (Bamberger,2012). Concurrent triangulation was most suitable for this study as it allowed the researcher to separate analysis of both quantitative and qualitative data, do a comparison, and verify if findings from both could confirm or disconfirm each other.

Population and Sample Size

The target population for the study was 52 secondary schools within Nyakach Sub-county. Saunders (2003), defines study population as a full set of cases from which a sample is drawn. According to Kisumu County Education Registry (2024), there are 52 secondary schools in Nyakach Sub-County. The schools are classified as extra-county, county and sub-county depending on resource and infrastructural endowment. The accessible population included one Quality Assurance Officer (QUASO) based at the Sub-county education offices, 52 Heads of Humanities Department, 136 Geography teachers. Based on the 17 schools the researcher purposively selected 17 HoDs, 60 teachers.

Data Collection

The study used five instruments for data collection namely: two sets of questionnaires, interviews, observations and focus group discussions. The questionnaires consisted of both closed and open-ended questions. The questionnaire for teachers was used to collect data on their gender, experience,

academic qualifications and their perception on the influence of the utilization of the field work teaching strategy on teaching, learning and performance of students. They were required to give their views on a five point-likert scale consisting of five options namely, 'strongly agree', 'agree', 'disagree' or 'strongly disagree' with 'undecided' option. QUASO and HoD interview schedule were meant to collect personal data and their perception on the teaching and learning strategies used in teaching Geography. The classroom observation guide was used to establish if the teachers applied the mentioned strategy or not in his/her teaching time. Finally the focus group discussion guide was used to collect information from the students on how they viewed the strategies and challenges faced in the learning of Geography.

INSTRUMENTATION

Validity of the Instruments

For the purpose of this study, both the face and content validity of the instruments were ensured. To ensure validity of the instruments, the initial drafts of the instruments were scrutinized by experts in questionnaire and observation guide construction who were required to check for all non-technical flaws in the instruments. Such inputs enhanced a thorough validation in order to ensure that the instruments actually measured what they were intended to measure in relation to the research hypothesis. Based on the suggestions and comments of these experts, the necessary corrections were made before the final version of the instruments were trial tested on a sample of 14 teachers who were not included in the actual study sample, in Nyakach sub-county Kisumu County, Kenya.

Reliability of the Instruments

Reliability of the Instruments The reliability consistencies of the Teacher Questionnaire, students questionnaire and Classroom Observation Guide were verified through examination of internal consistency of the measures. This was achieved by computing Cronbach's alpha (α) coefficients using the Statistical Package for Social Scientists (SPSS) version 29 . The decision on instrument reliability was based on Frankel and Wallen's (2000) advice that reliability should be at least 0.70 and above. The classroom observation guide was at 0.797 while the teachers' questionnaire (TQ) was at 0.833. The construct, content and criterion related validities were found to be adequate.

Data Collection and Analysis Procedure

The necessary data for this study were obtained from teachers, HoDs and students of the selected schools in the sub-county. After collection of data, questionnaire responses without corresponding responses to the classroom observation guide (COG) were discarded. The questionnaires were then collected for safe custody awaiting analysis. The researcher also requested for the opportunity to observe lessons to be taught by the respondents. The observation and data collection lasted for one school term. Data were analyzed using multiple regression at .05 level of significance.



Result and Findings

The objective on this strategy sought to explore how the use of field work as a teaching strategy influences the learning and performance of learners in geography in public secondary schools

in Nyakach Sub-County, Kenya. Results on items on the Likert scale that sought response from both teachers and learners were examined under the statements below.

Table 1: Teachers response on use of Field work method

Item	SD		D		U		A		SA		TOTAL	
	F	%	F	%	F	%	F	%	F	%	F	%
1. I use fieldwork to teach geography lessons	20	33.3	17	28.4	15	25	6	10	2	3.3	60	100
2. I take learners for field trips	1	1.7	32	53.3	22	36.6	4	6.7	1	1.7	60	100
3. During field-trips, I pair the learners	12	20.0	26	43.3	16	26.7	4	6.7	2	3.3	60	100
4. During field-trips, I group learners	9	15.0	29	48.3	17	28.3	5	8.3	0	0	60	100
5. Learners present field reports during lessons	14	23.3	25	41.7	15	25	6	10	0	0	60	100

Source: Field data (2024)

Item 1 in Table 1 is evident that 37 (61.7%) of the teachers generally disagree that they use field work to teach geography while 3.3% strongly agree concerning use of fieldwork. Item 2 in Table 1 indicates that out of 60 teachers, 33(55%) are not in agreement that they take learners for field trips as a way to deliver geography content. Item 2 in Table 1 further reveals that 36.6% of the teachers are *undecided* as to whether they take learners for field trips. Furthermore, 6.7% teacher respondents held that they usually take learners for field trips as a strategy of learning in geography. From Table 1 it is therefore evident that majority (86.7%) of sampled teachers are uncertain of their use of fieldwork as a teaching strategy as they chose *undecided, disagree* and *strongly disagree*. This hesitation to use fieldwork is further portrayed in the observation which confirms that all observed teachers did not use this strategy during live lessons but merely made reference to it perhaps to be used in future, a disposition that is very uncertain.

Item 3 in Table 1 indicates that 63.3% of the teachers do not pair learners during field trips while 3.3% of the teachers do pair the learners during field trips. Furthermore, 26.7% are *undecided* whether they pair the learners during the field trips, while 6.7% of the teachers agree that they pair learners during field trips as an approach to knowledge acquisition in geography. It therefore implies that there are field trips but learners are apparently not paired as a strategy for learning according to 63.3% of teacher respondents.

Item 4 in Table 1 shows that 38 (63.3%) of the teachers do not agree that they group learners during field trips while 28.3% are *undecided* on whether they group learners during field trips. Furthermore, 8.3% indicated that they *agree* that they group learners during field trips.

As concerns item 5 in Table 1, it can be observed that 39 (65%) of the teachers do not agree that learners do present their field reports in geography lessons. This has two implications. First it implies that learners do undertake field trips as a learning strategy in geography as shown by items 1, 2 and 3 in Table 1 above. Secondly, it shows strong reference to field work during live lessons in the teaching and learning of geography as teachers tended to refer to undertakings in fieldwork which had presumably been either done in the past or are to be done in future.

More findings from interviews with EQUASO and Hods, and discussions with students (FGDs) seem to corroborate the trend on minimal use of fieldwork that is depicted by item 1 in Table 1 which stands at 61.7% teacher respondents negating use of fieldwork, and item 1 in Table 2 where 64.8% student respondents generally disagree that they go for fieldwork during lessons. In fact, when Hods were asked which strategies teachers use to teach geography, majority were quick to mention lectures, revision notes, questioning, brainstorming, assignments with few of them sheepishly coming up with fieldwork only after much probing. Here are some verbatim statements to affirm this stance of Hods. Hod 17 from sch 17 opined: *‘embracing real fieldwork in our school is a tall order, there are many competing interests against fieldtrips, for now, teachers just use theory and imagination to teach those topics that needed field experience’* another one quipped: *‘occasionally, teachers conduct fieldtrips and whenever they do, our students register improvements in their performance because they are able to digest concepts better’* (Hod 10, from sch 10). On the same matter of strategies currently in use by teachers of geography in secondary schools in Nyakach, EQUASO had this to say: *‘fieldwork is scantily used by our teachers, yet it is one strategy that has potential to ease learners’ grasp of content because they see and feel what they are taught’*. On being asked about why this scarcity of fieldwork, EQUASO added: *‘most schools are running on tight budgets and geography may get what remains (referring to funds) and many times there is nothing’*. While submissions from both Hods and EQUASO reveal that teachers barely use fieldwork to teach geography, then one wonders how their claims that fieldwork eases grasp of content or even that performance would be improved can be realised in such a void. As a matter fact, when students were asked how the use of fieldwork influences their learning, they emphasized instead that they yearned to be taught more through exposure, practical experiences and active involvement in their learning process with majority emphasizing the need for more fieldwork during geography instruction. Here are some of their submissions verbatim: *‘last time we had fieldwork, I was able to understand concepts that had been a challenge for me, wish we could have more of such experiences’* (Lnr 22 from sch 10). In addition, Lnr 12 from sch 2 opined: *‘Fieldwork it is, I cherish the interviews and group work in it, because they are informative, they make me confident and more knowledgeable hence making*



learning easier'. The learner added: 'wish our teacher could organize future trips well'. Notably, a key method of data collection like document analysis did not yield results on fieldwork because no teacher planned to use this strategy hence there was no indication in their lesson plans.

These findings are corroborated by the learners as shown in Table 2 below.

Table 2: Student's responses on use of Field work method

Item	SD		D		U		A		SA		TOTAL	
	F	%	F	%	F	%	F	%	F	%	F	%
1 We go for fieldwork during geography lessons	68	21.1	141	43.7	27	8.4	66	20.4	21	6.4	323	100
2. Our teacher refers us to fieldwork during geography lessons	99	30.7	109	33.7	33	10.2	56	17.4	26	8.0	323	100

Source: Field data (2024)

Item 1 in Table 2 indicates that 68 (21.1%) of the students *strongly disagree* they go for field work during geography lessons. Furthermore, 141 (43.7%) *disagree* they go for field work during geography lessons, while 21 (6.4%) *strongly agree* that they go for field work during geography lessons. Overall, 64.8% of the students are not in agreement that they go for field work during geography lessons. This is further complemented by teachers' views as highlighted by items 1,2 and 3 in Tables 1. There were 26.8% of students who held contrary opinion that they do not go for fieldwork during geography lessons while 8.4% were undecided.

Item 2 in Table 2 shows that 208 (64.4%) chose *strongly disagree* and *disagree* that teachers do make reference to field work during

geography lessons to make learning more meaningful and real. In addition, 8% student respondents *strongly agree* that teachers refer them to fieldwork during geography lessons. Furthermore, 10.2% of the students were undecided while 17.4% chose *agree* that teachers refer them to field work during geography lessons. The disagreement by majority at 64.4% tends to be reflected in the views of teachers on the statement that "learners present their field reports in geography lessons" as presented by item 5 in Table 1.

This study went further for an in-depth analysis of results from questionnaires covering fieldwork strategy to show the means and measure of skewedness values as presented in Tables 3 and 4 below.

Table 3 Mean values on use of field work as a teaching strategy by teachers of geography

item	1.I use fieldwork to teach geography lessons	2.I take learners for field trips	3.During field-trips, I pair the learners	4.During field-trips, I group learners	5.Learners present their field reports in geography lessons
N	60	60	60	60	60
Mean	2.22	2.53	2.30	2.30	2.22
Skewedness	.599	.989	.699	.302	.352

Source: Researcher (2024)

Results for item 1 in Table 3 shows a mean distribution of 2.22 with a skewness index of 0.599 which implies that majority of teachers are not in agreement that they use fieldwork in the teaching of geography. Elsewhere in the document Table 3 displays 64.4% learners as being in disagreement that they go for fieldwork. A generated statistical measure of mean and skewness seem to support the foregoing finding thus yielding a mean of

2.48 a right-skewness value of 0.594 which implies that fieldwork brings some positive benefits in the learning process. This position is complemented by teachers' views as contained elsewhere in this document in Table 1 by items 1,2,3,4 and 5. The finding is further emphasized by the presentation in Table 4 below



Table 4 Mean values for use of field work as a learning strategy by students

Descriptive statistics	1.We go for fieldwork during geography lessons	2.Our teacher refers us to fieldwork during geography lessons
N	323	323
Mean	2.48	2.38
Skewedness	.594	.630

While values contained in Table 3 and 4 imply that both teachers and students are in agreement that they do not use fieldwork intensively in geography instruction though it may have benefits, findings from other instruments that also support this ability of fieldwork to foster learning include submissions of FGDs (Lnr 22 sch 10, Lnr 12 sch 2) and interview results (Hod 3; EQUASO) which seem to underscore the fact that through fieldwork, learners stand to gain a lot, including becoming knowledgeable, developing ability to deeply understand abstract concepts, build confidence, sharpen skills like those of leadership, cooperation and teamwork.

Discussion

There are many scholarly works across the world that have addressed the way fieldwork is used in geography instruction. Such works include Fuller et al, (2011); Falana(2015); Eze(2021); Tanyanyiwa (2021); Gantait (2022) all decry the state of fieldwork as a teaching strategy in schools. More specifically, Fuller et al, (2011) in their paper, addressed the assumptions on the effectiveness of fieldwork as a mode of learning in geography. While bemoaning the place of fieldwork in the teaching of geography they (Fuller et al., 2011) implore that there is a need for rigorous research to unveil not merely the value but much more to investigate the role fieldwork plays in student learning so as to answer the question on how it is utilized as a strategy for instructional purposes. As if in response to the foregoing plea, the current study readily sets in to explore the influence of use of fieldwork in the teaching and learning of geography.

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Summary of Findings

Findings of the study are summarized as follows:

- i) Inferential statistics show that majority of the teachers do not use field work as a teaching strategy and the few who use it do not maximize its usage.
- ii) It was established that teachers do not group their students during group work so as to maximize use of the available resources.
- iii) For those teachers who use fieldwork, it seems that they do not provide an opportunity for the students to present their field project work in class during lessons.

Recommendations

- Recommendations from the findings of this study were that;
- i) Given that the present study is limited to public secondary schools in Nyakach Sub-County, similar studies could be carried out in other parts of the country to affirm or refute the conclusions reached.
 - ii) There is need to channel more funding towards facilitating field work so as to improve on learning.



iii) Teachers need to be retooled teachers on use of field work approach and be encouraged to execute it to teach geography.

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