ROLE OF FIELDWORK IN GEOGRAPHY PERFORMANCE: A CASE STUDY OF EDUCATION STUDENTS OF THE UNIVERSITY OF NAIROBI

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ABSTRACT
The term "fieldwork" refers to educational and in this sense, geographical activities conducted in a field setting outside the normal classroom environment. It is very key to geographical studies and had previously been mandatory for all students undertaking geography since it has been established that fieldwork enhances the performance of students by translating classroom theories into reality. However, with the introduction of different other modes of learning, some of which do not allow time for fieldwork, not all students have the privilege of being exposed to fieldwork. Coupled with this is the inability of some learners to meet the finance requirements of fieldwork. Using a quantitative approach, this study set out to test the hypothesis that: students who are exposed to fieldwork do not significantly perform better than those who are not exposed to fieldwork at the end of the academic year. The study used systematic random sampling with a random beginning to select geography students in their third and fourth year of study, from the school of education and the school of open and distance learning of University of Nairobi. A total of 170 students were sampled. The examination scores of these students was analyzed using chi square and Pearson product moment of correlation. The study found that fieldwork exposure was effective in improving students' performance in Geography. This study recommends that; fieldwork should be made mandatory in all Universities where geography is a discipline, and that the Universities find a way of financing the fieldwork so that all students could be exposed to it.
Keywords: Fieldwork, geographical activity, normal classroom environment, geographical studies, educational, performance, reconnaissance.

INTRODUCTION
Geography is all about the interaction of people and their environment, hence fieldwork plays a central role in helping us to explain this interaction while making it possible to understand more fully the environment in which we live. Thus fieldwork makes geography come to life by putting concepts learnt in the classroom into real life context, while enabling students to grasp how geography literally shapes the world around us. Fieldwork has therefore been considered as one of the most enjoyable form of teaching and learning because it provides a variety of teaching modes. Accordingly, fieldwork is an essential part of geographical studies (Gold & Haigh, 1992; McEwen, 1996b). Thus

virtually all lecturers in geography recognize the importance of fieldwork as a vital mode of teaching in the subject. Field studies provide the opportunity to experiment with a wide variety of different modes of course delivery and have a valuable role as a vehicle for the integration of many theoretical and practical concepts taught within a geography degree (Kern & Carpenter, 1984, 1986; Lonergan & Andreson, 1988; McQueen *et al.*, 1990; Gold *et al.*, 1991; Gold & Haigh, 1992; McEwen, 1996b).

Importance of Fieldwork

So what is field- work? The term field-work is a compound word made up of two words; field and work. Field has been defined as ‘’ any place where supervised learning can take place through first-hand experience, outside the constraints of the four walls of a classroom setting’’ (Lonergan & Andresen, 1988, Sampath, Panneerselvam, & Santhanam. (2006). This definition implies that ‘field’ must be outside a classroom. The term "fieldwork" therefore refers to educational activities conducted in a field setting. (Gold, Jenkins, Lee, Monk, Riley, Shepherd, & Unwin, 1991). Tal and Morag (2009), describe field study as students‟ experiences outside the classroom at the interactive locations designed for educational purposes.

Fieldwork has got key attributes which include: out of class locality, in core being the direct and firsthand experience of a phenomenon, and lastly, any fieldwork must have both educational or pedagogical nature and purpose aimed at enhancing teaching and learning in an area of the curriculum. Given these three attributes, a scholarly definition of field-work, and which sets it apart from other forms of outings, must include the key attributes mentioned above. In this paper, field-work is defined as educational activities conducted in a field setting outside the normal classroom environment (Lonergan and Andresen, 1988).

Field experience contributes immensely to the overall development of students as qualified practitioners in all aspects of geography. This is because a great deal of research in geography and any other discipline for that matter tends to be field-work based (Gold, et al 1991). Despite this acknowledged importance attributed to fieldwork, not all geography students at the University of Nairobi (UoN) get exposed to it. The UoN has different categories of students as categorized by their modes of study. The school of education offers mandatory fieldwork and practical geography which form an integral part of the course units taught within the discipline. However, the school of open and distant learning mainly uses print and audio materials for instructions. It also provides support services to the learners in the form of minimal face to face tutorials and counselling. Given the limited number of tutorial contact hours and inadequate laboratory facilities open and distant learners are neither subjected to practical geography nor exposed to mandatory fieldwork.

Challenges Inhibiting Fieldwork Exposure

As much as fieldwork is key to geographical studies, there are challenges that hinder its actualization in most universities. The major challenge to fieldwork is financial constraints. Before the students proceed to the field, the members of academic staff from that Department are first of all required to carry out a reconnaissance field survey in the designated areas of study so as to make arrangement for students’ accommodation, organize field lectures with relevant field officers, arrange for guided tours in the field, and to approve site visit among other tasks. The University is therefore expected to cater for subsistent and accommodation for academic members of staff, drivers, mechanics and other support staff. The University also caters for field materials, field facilitation fees, game park charges and other institutions of interest. A combined budget covering both fieldwork and reconnaissance survey can be as high as Kenya shillings 900,000.00. This figure far much exceeds the Departmental vote allocation for the entire academic year. This high cost of field work makes it expensive for the universities to meet the vote. For this reason, part of the fieldwork vote is transferred to the students who are already financially pressed. Universities therefore try to reduce the cost of fieldwork by drastically reducing the number of days allocated for field study from the senate approved 14 days to as low as 5 days. This compromises the quality as well as the coverage of fieldwork sites. Previously, Geography students would be allocated loans to help ease the burden by HELB. Unfortunately this is no longer the case as students are expected to meet their own cost of subsistence and accommodation. Quite a number of students therefore find fieldwork funding a daunting tasks. Other challenges include: finding accommodation at a cheap cost for all the students, unexpected costs from the assigned field officers from other organizations, who expect to be given a token of appreciation, which is not always approved by the University accounting system, accidents resulting from handling tools and equipment, difficult terrain and poor weather conditions among others. This paper set out to establish the contribution of fieldwork towards students’ performance by comparing the results of those students exposed to fieldwork against the results of those students who were not exposed to fieldwork. Thus the study set out test the following hypothesis.

Research Hypothesis
The guiding hypothesis was;
HO: Fieldwork does not significantly contribute towards the overall performance of geography students.

METHODOLOGY
The study adopted a quantitative approach which involves the use of inferential statistics.

Sampling
The study used systematic sampling with a random beginning to select from two categories of students; those from school of education and those from school of open and distance learning, in their final year of study. From each list 30% of the students were samples from cohorts of 2015- 2019. The total number of students sampled from the category of open and distance learning was therefore 100. This constituted 30% of the students registered and examined for Geography during the reference period. From the school of education, 70 students were sampled to constitute 30% of students registered and examined during the same period. The total number of students sampled from the two categories of students was therefore 170.

Data Collection
Secondary data was obtained from examinations records from the school of education and the school of open and distance learning, covering the period 2015-2019. Examination grades obtained by the learners in the sample were extracted, compiled and subjected to data analysis.

Data Analysis
The data collected was subjected to chi- square analysis and bi-variate Pearson product moment correlation. The aim of the statistical analysis was to determine whether fieldwork exposure significantly improved students' performance in geography. Chi square: This is a non-parametric test of significance, which is used to determine whether the observed frequencies significantly deviate from the expected frequencies.

$$\chi_c^2 = \sum \frac{(O_i - E_i)^2}{E_i}$$

Where;
(O) is observed frequencies,
(E) is expected frequencies
X Squared is computed value of chi square

The test produces a value for Chi square value of chi-square which is then checked against the theoretical value of Chi square, to determine the level of significance that has been reached. The level of significance was set at 0.05 level, at which the decision was reached to reject the null hypothesis. The performance of students who were exposed to field study were compared to those of distance learners who were not exposed to compulsory field study. The contingency table for this comparison (chi-square analysis) is presented in table 1 below:

Table 1: Chi-Square contingency table for fieldwork exposure against examination performance

Categories of students	Performance in terms of %				
	70-100%	60-69%	50-59%	Below 50	Total
School of Education (Exposed to fieldwork)	25	24	13	08	70
Open and Distance Learners(Not exposed to fieldwork)	10	29	32	29	100
TOTAL	35	53	45	37	170

Degree of Freedom= 3; Computed value of x^2 (Chi square) = 19.23; Critical value of x^2 (Chi square) at 5% level of significance = 7.82.

The results of Chi square

When the data presented in the contingency table was subjected to chi-square analysis, it was found that the calculated values of chi square of 19.23 to be much higher than the critical value of chi square (7.82) and hence the results does not support the null hypothesis that fieldwork exposure does not significantly improve students' performance in Geography. This implies that the difference observed in the performance of the two categories of students was significant and could not be said to have arisen due to chance variation. It was therefore concluded that there were underlying factors accounting for the observed variations.

Bi variate analysis: Pearson

The same data was further subjected to bivariate analysis using Pearson product moment of correlation. Bi-variate statistics was used to determine the strength and the direction of the relationship between exposure to fieldwork and performance in the examination between the two categories of students. Table 2 shows the marks scored by students exposed to fieldwork and those who were not exposed from 2015 to 2019. From the table below, it is evident that the students who are exposed to fieldwork had a higher mean score (65%) as compared to those who were not exposed to fieldwork (56%).

Table 2: Percentage mean score performance by fieldwork exposure

Academic Year	X (exposed to fieldwork)	Y (Not exposed to fieldwork
2015	67	60
2016	66	49
2017	62	53
2018	73	61
2019	57	56

Mean of x = 65; Mean of y = 56

A test of correlation using Pearson coefficient established that there was medium positive correlation between fieldwork exposure and students performance (r= 0.423). Pearson coefficient of determination (r squared) revealed that approximately 18% of the variability in examination performance between the two categories of students was accounted for by exposure to fieldwork.

DISCUSSION OF FINDINGS

This discussion on the findings focuses on two key sub areas as found in the study. In the first instance, the study found that there was a significant difference between the results of the two categories of students. The implication of the finding was that there could be other factors, other than exposure to fieldwork, which may contribute to these differences in performance. According to Bowa, (2008), other factors which contribute to poor performances especially in Open and Distance learning include; learners' characteristics; age, marital status, family size, entry academic qualification, and learners engagement in supplementary sources of income. In the same study, he also established that learner support services did not contribute significantly to academic performance of distant learners because the services were either not adequately provided or because learners lacked easy access to the services. Thorpe, (1987) and Evans, (1994) also established that distant learners study part time and need to balance a range of responsibilities. This gives rise to conflicting commitments in which study assumes a lower priority than family and work commitments. To the contrary, most students in the school of education undertake full time study and are much younger. The age of most students in open and distance learning range between 20-51 years with a mean of 36 years (Bowa, 2008). Those in the school of education tend to range between 17-25 years. The younger students perform better in examinations possibly because they are better able to access more learner support services because they have got fewer extra-curricular social commitments as compared with their older counterparts (Bowa, 2008).

The second area of discussion regards the correlation between exposure to fieldwork and students performance. The results revealed that there was a medium positive correlation between fieldwork exposure and students performance (r= 0.423). 18% of the variability in examination performance between the two categories of students was attributable

to fieldwork exposure. Though the figure may appear low to those who may not appreciate the value of fieldwork, it should be noted that fieldwork exposure remain core in geographical studies. Fieldwork creates; 'Awareness and understanding of, and concern and eventual responsibility for, 'real places'… through direct contact. There is not and there cannot be any substitute for the immediacy of field experience ... Indeed, it may be argued that fieldwork is as intrinsic to the learning and teaching of geography as clinical practice is to medicine. (Pearce, 1987, p. 35)''.

Fieldwork remain important to geographers. Jones, (1969) strongly advocates that when we train and seek to inspire a new generation of geographers, we must by principle and by example remind them that the great discoveries and advances in geography have been made by men and women who went to look and think in the field. Nundy, (2001), on the other hand has also provided three major benefits of fieldwork which we cannot ignore. These include:

A positive impact on long-term memory due to the memorable nature of the fieldwork setting. Affective benefits of the fieldwork experience, such as individual growth and improvements in social skills; and, Reinforcement between the affective and the cognitive, with each influencing the other and providing a bridge to higher order learning.
Armstrong (1989) also reinforces that fieldwork equips learners with social skills necessary for future careers. This is because it inculcates in the students the ability to become independent workers. This encourages individual growth and work ethics which are key in any working environment.

The pedagogic benefit of fieldwork has also been established in a study conducted in Kenya, Zimbabwe and Gambia. This study concluded that fieldwork was effective in terms of both teaching and learning (Robson, 2002). This is because fieldwork breaks the boredom thus making teaching and learning more exciting, realistic and clear. Consequently, students are able to relate geographic theory and geographic reality. For geographers, fieldwork still offers the best opportunity; to demonstrate physical processes, to induce the elucidation of geographical course effect by the students and, most importantly to inspire them to travel always with investigative eyes.

RECOMMENDATIONS

This study recommends that:
Establishments be made as to why a larger proportion of geography students enrolled in open and distance learning perform poorly; Fieldwork should be made mandatory for all geography students irrespective of their mode of study; Further research to establish other underlying factors that contribute to the differences in performance between geography students exposed to fieldwork and those who are not exposed; and, Universities explore ways and means of sourcing funds to enable all students undertaking geography to be exposed to fieldwork experience.

REFERENCES

Armstrong, H. (1989). *World Geography*; *people and places*. Merrill Publishing Company. Columbus, USA.

Bowa, O, (2008). The influence of Learner Support Services on the Academic Performance of Distance Learners: The Case of University of Nairobi, External Degree Programme in Kenya. PhD thesis. University of Nairobi.

Evans, T. (1994) Understanding Open and Distant Learners. London: Kogan Page

Gold, J., Jenkins, A, Lee, R., Monk, J., Riley, J., Shepherd, I., & Unwin, D. (1991). *Teaching geography in higher education: A manual of good practice.* Oxford: Blackwell.

Gold, J.R. & Haigh, M.J. (1992). Over the hills and far away: retaining field study experience despite larger classes, In: G. Gibbs & A. Jenkins (Eds) *Teaching Large Classes in Higher Education*, pp. 117-129 (London, Kogan Page).

Jones, P.A. (1969). Fieldwork in Geography: London: Longmans.

Kern, E.L. & Carpenter, J.R. (1984) Enhancement of student values, interests and attitudes in Earth Science through a field-orientated approach, *Journal of Geological Education*, 32, pp. 299±305.

Kern, E.L. & Carpenter, J.R. (1986) Effect of field activities on student learning, *Journal of Geological Education*, 34: 180-183.

Lonergan, N. & Andresen, L.W. (1988) Field-based education: some theoretical considerations, *Higher Education Research and Development*, 7: 63-77.

McEwen, L. (1996b) Fieldwork in the undergraduate geography programme: challenges and changes, *Journal of Geography in Higher Education*, 20: 379-384.

MCQueen, K., Taylor, G., Brown, M. & Mayer, W. (1990) Integration of teaching and research in a regional geological mapping project, *Journal of Geological Education*, 38, pp. 88-93.

Nundy, S. (2001). Thoughts from the field: in their own words. *Horizons, 4*, 20-22.

Pearce, T. (1987). Teaching and learning through direct experience. In P. Bailey & B. T. (Eds.),A *case for geography* (pp. 34-37). Sheffield: The Geographical Association.

Robson, E. (2002). ''An unbelievable academic and personal experience'': Issues around teaching undergraduate field courses in Africa; Journal of Geography in Higher Education, 26: 327-344.

Sampath, K. Panneerselvam. A, & Santhanam.S (2006). "*Introduction to educational technology*", Sterling Publishers Pvt Ltd

Tal, T., & Morag, O. (2009). *Reflective Practice as a Means for Preparing to teach outdoors in an Ecological Garden*. Journal of Science Teacher Education, 20(3), 245-262.

Thorpe, M. (1987) Adult Learners in Open Learning for Adult. Thorpe. M. and Gregon, D. (Eds) Essex UK: Longman Harlow.

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