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Fieldwork, mapwork and the use of pictorial material are all techniques which are advocated for teaching geography both at the primary and secondary levels of education. To be educationally beneficial, however, each must be adapted to the group of children for which it is intended. In the first instance, the learning activities must be related to the stages of the mental growth and development of children.¹ Secondly, we ought to accept what Scarfe calls the "theory of concentric development", that is, that geography should be taught as a consecutively developing topic growing rather like a biological organism and that a programme of geographical studies should be planned which provide for a sequential development of increasingly difficult concepts or ideas as a method of introducing pupils to the study of geography and of developing their skill in using the methods and tools of that discipline.² Thirdly, we must have some clear ideas as to what constitutes the core of school geographical education whose development has to be partly promoted through successive stages of fieldwork programme. As Catherine and her colleagues have tried to analyse, pupils' geographical education may be said to develop through five successive stages, each characterised by a major objective, namely:-

- Stage (i) the ability to observe and describe individual geographical elements of the local area;
- Stage (ii) the ability to understand how those elements influence one another;
- Stage (iii) the ability to investigate and thereby come to understand the causes and origins of the various elements;
- Stage (iv) the ability to synthesize knowledge of individual elements in a study of the local landscape;
- Stage (v) and as a result of the pupils' horizon from the local area to other areas, to develop global concepts.³

In the paragraphs which follow, a considered attempt is made to apply the above five-stage programme of geographical education in connection with the study of one fieldwork topic. The topic is "a landform study of a small area, four kilometres west of Makerere University, Kampala, Uganda, and the aspects which have been graded are:

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The fieldwork objectives,
excursion activities, and
follow-up exercises.

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Landform field-study activities for lower secondary (S.1 & S.2)

Objective

To develop skills in observing and describing landforms in the Kasubi area of Kampala City (the work being combined with the use of survey map).

Preparation

- Equipment - 5 copies of the Kampala sheet scale 1:50,000; and cyclostyled outline field-sketch map of part of the landscape to be studied, enough for every pupil.
- Preliminary visit by teacher to the area to be studied to find convenient viewpoints.
- Transport arrangements and organization of pupils:
 - Pupils to assemble in front of the office, 10.30 a.m.
 - Duplicated sheets and maps given out and purpose of fieldwork stated.
 - Departure 10.50 a.m. by bus.
 - Arrive at first viewpoint 11.00 a.m.
 - Return to school 12.30 p.m.

Field study activities

- Look at the view of the landscape in front of us. What name do we give to this kind of landscape (hilly)? Describe the skyline (it is irregular or uneven). We are standing facing northwest. What is the hill directly to the north called (consult your map)? What is the altitude of the hill above sea level (consult your survey map)? How high does it rise above the surrounding countryside? Describe the summit area or hilltop (it is generally flat). Look at the slopes of the same hill and describe them (rather gentle lower down but steeper nearer the top).

Now look at the other hill east of this one we have been looking at. In what ways is it similar to the other one in altitude, height above the surrounding countryside, slopes and summit area? What kind of landform separates the two hills (valley). How wide is the valley?

- Look at the outline field sketch of the landforms of this area, and valleys indicated. Use the map to help you.

- Look at your survey map again and locate where we are standing. Orientate the map so that you are able to compare what is on the map with what is on the ground. Locate the two hills and the valley. Name them on the field sketch. Look at the linear scale of the map. How far apart are the two hills? How are the two hills represented on the map (by many circular lines)? What are these lines called (contours)? Look again at one actual hill shown (contours almost absent)? Look at the steepest slope. How is it shown on the map? (contours very close together). Look at gentle slope and see how it is represented on the map (contours widely spaced). If you were asked to take something from the top of hill X to somebody on top of hill B, describe the types of landforms and slopes you would pass through, assuming you are to walk along a straight line.

Follow-up activities

- Pupils divided into 5 groups:
- Group I to make a model of the landscape studied
 - Group II to draw a large field sketch map of the area studied.
 - Group III to draw a cross section to show the two hills and the valley.
 - Group IV to copy contoured map of same area from survey map.
 - Group V to briefly describe the landforms studied.

Landform field-study activities for middle secondary (S.3 & S.4)

Objective

To develop pupils' skills in observing the relationships or influence of landforms on other individual geographical features in the zone west of Kampala.

Field study activities

- From this hill top, how many hills can you see within a radius of 3 kilometres? (more than seven). In what ways are the hills alike? In what ways are they different? Describe the valley that separates the hills.
- Which side is north of this hill? (west, east). Draw a rough cross section of the landforms from north to south. Now draw another one from east to west. What difference can you see?
- As we walk down along this footpath to the bottom of the hill towards the swamp, I want you to note variations in the vegetation, soil, agriculture, settlement and transport in relation to the slopes (upper slope; middle slope; and lower slope down to the swamp).

- Look at your survey maps again and locate where we are standing. Orientate the map so that you are able to compare what is on the map with what is on the ground. Locate the two hills and the valley. Name them on the field sketch. Look at the linear scale of the map. How far apart are the two hills? How are the two hills represented on the map (by many circular lines)? What are these lines called (contours)? Look again at one actual hill shown (contours almost absent)? Look at the steepest slope. How is it shown on the map? (contours very close together). Look at gentle slope and see how it is represented on the map (contours widely spaced). If you were asked to take something from the top of hill X to somebody on top of hill B, describe the types of landforms and slopes you would pass through, assuming you are to walk along a straight line.

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- As we walk down along this footpath to the bottom of the hill towards the swamp, I want you to note variations in the vegetation, soil, agriculture, settlement and transport in relation to the slopes (upper slope; middle slope; and lower slope down to the swamp).

- (d) What relationship have you discovered existing between the slopes and individual elements, e.g. slopes and soil, vegetation, agriculture, settlement and transport.

Follow-up activities

- Each pupil (a) to describe the landforms with the help of cross-sections.
(b) to draw a large transect diagram to show the variation of soil, vegetation, agriculture, settlement and transport with slopes.

Landform field-study activities for upper secondary (Sixth forms)

Objectives

- To lead pupils to understand the origins and causes of the present landforms west of Kampala.
- To give pupils opportunity to synthesize their knowledge of the inter-relationships of elements in the local area, which, when extended to large areas, leads to the recognition of geographical regions.
- To develop further understanding of the associations of geographical elements in the local area by leading them to appreciate the significance of the local area to other parts of Uganda and the significance of other parts of Uganda to the local area, in terms of landforms.

Excursion activities

- Draw a field sketch of the landforms from here looking eastwards. Briefly describe the landforms seen.
- What relationships exist between the landforms and land utilization? Suggest reasons for your observation.
- The tops of hills in the Kasubi part of Kampala as of those in other parts of Buganda, were formerly part of the African plateau. What is a plateau? What name do you give to this part of the plateau (dissected plateau)? The appearance of landforms here as elsewhere, is related to the forces which have acted on the rocks. Study the geological map and describe the geology of this area. What forces of erosion have acted on the rocks in this locality? Can you suggest a possible origin of these hills? Why do you think the river and sheetwash were able to erode the rocks there much more quickly than on this hill top? What name do we give to this hard rock capping the hills (Laterite)?
- The appearance of landforms here is also related to the nature of the underlying rock. What do you think will happen to the hills when the

forces of erosion erode all the hard lateritic rocks on hill tops (hills will erode much more quickly)? Where are the eroded rocks from the hillsides deposited? What name do we give such rock being deposited in strata? (sedimentary).

(e) The appearance of the landforms here is also related to the stage of erosion reached. What stage of erosion have the rivers reached here? Youthful? Mature? Senile? What evidence support your answers? Do you think the streams and rivers here are fast flowing (slow)? Why slow (swampy)? Why impeded drainage (the result of tectonic movements and its associated upwarping and downwarping associated with the formation of Western Rift and Lake Victoria). If the appearance of landforms here is related to the stage of erosion reached, what do you think will eventually happen to the landscape here? (might become a peneplain).

(r) Synthesis and global concept - looking at the various aspects of the landscape here as a whole, what generalization can you make about the relief? Into how many regions can the relief be divided? Describe each relief region. In what ways are the landforms here similar to the landforms of the surrounding countryside? What does this reflect (they represent same erosion surface)? Who has been to western Ankole? How high are the hills of western Ankole? How different from these hills (hills are higher and more rounded)? If they are higher, what does this mean in terms of erosion surface reached (represents an erosion surface higher than that of south Buganda)? Who has been to eastern and northern Uganda? What is the landscape like (it is largely peneplain)? What erosion surface does it represent (a more advanced stage than any erosion surfaces in Uganda)?, etc., etc.

Follow-up activities

- Study the physical map of Uganda plus its notes on page 6 of the National Atlas of Uganda.
- Draw the relief map of east and west Buganda with the help of your textbook and the National Atlas.
- Draw a detailed relief map of the area we have studied in the field.
- Write brief notes on this small area and associate it with landforms and erosional surfaces found elsewhere in Uganda.

Conclusion

It is hoped that the above graded fieldwork activities have thrown some light on one possible application of Scarfe's theory of concentric development, that is, of the sequential development of increasingly difficult concepts of ideas. However, it is important to stress that the five stages of the development of geographical learning are not in any way intended to suggest that learning geography may be isolated into rigid stages, each mutually exclusive of the other. As a matter of fact, the stages should be regarded as being complementary, overlapping in pro-

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gression from stage to stage depending on the ability of the class; the local circumstances; the outcome of researches in the development of the numerous geographical concepts; and on the cultural background of the learners themselves. For example a child of eight years of age living in the hilly district of Kigezi may more readily understand the concepts of relationships between slopes, soils and landuse than a child of twelve living in the peneplain of eastern or northern Uganda. Thus, the above suggestions made as to the age group at which various fieldwork activities should be pursued must be understood as being only tentative and not necessarily applicable at all times and in all areas.

1. For more information on how fieldwork activities may be related to the psychological development of children, refer to Ocitti, J.P. "The Development of Geographical Education Through Successive Stages of Fieldwork". Uganda Geographical Association Newsletter, No.5, 1971. pp.11-15
2. Scarfe, H.V. "Sequential Development of Increasingly Difficult Concepts through the High School." Journal of Geography, Vol.LX No.8, Nov. 1961, pp.351-357.
3. Catherine, D.J.S. and others, Local Geography in the Secondary School, Faculty of Geography, Sydney Teachers' College, Australia p.53; and p.13.

Agrarlandschaftliche Veränderungen in Tanzania (Germany).

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The book is illustrated excellent craftsmanship quality of reproduction

The book contains captions. Most of the addition, since a large a relatively small region belongs, and in Tanzania

BOOK REVIEWS

Agrarlandschaftliche Veränderungen in Tanzania by J. Schultz (Agro-geographical changes in Tanzania), Weltforum Verlag, Munich 1971, 294 pp., price DM.64.-- (Germany).

The main title of this book is somewhat misleading. As indicated by the long sub-title, it deals with "origin, forms and problems of agrarian development, as shown by the example of the Iruw Highland and the neighbouring areas". This region, in the Mbulu district of northern Tanzania, is unique in many ways, especially in its physical characteristics and the ethnic composition of its population. The Mbulu district is also exceptional as it is one of the few rural areas of Tanzania which shows a migration surplus.

The main weakness of this book is that it fails to show this region in its wider setting. Discussion of its relations with other parts of Tanzania is limited to an account of tribal movements and to recent government legislation. No mention is made of transportation or marketing of agricultural products. Characteristically, 20 of the 23 maps in the book show the Mbulu district as an isolated region. The conclusions in this book may therefore be only of limited validity outside the region, but no discussion of this viewpoint is given.

The description of agricultural changes in the Mbulu district is very thorough and goes into considerable detail. The author considers three main factors. The first is the physical environment, of which climate and landforms are the most important parts. They create large internal differences. The second is the human factor and the history of settlement, population density and economic attitudes are described. These two factors result in a very elaborate system of agricultural regions, which is not shown in a map. The final chapter considers the third factor: recent government policy decisions in their effect on the agricultural landscape. A clear picture of the Mbulu district and its agrarian development emerges.

The book is illustrated by more than 30 maps and diagrams. The maps show excellent craftsmanship, for which no acknowledgement is given. Despite the high quality of reproduction some of the maps suffer from excessive reduction.

The book contains an English summary and the illustrations have English captions. Most of the maps also contain legends in English. This is a valuable addition, since a large part of the public interested in a detailed description of a relatively small region will obviously be found in the country to which it belongs, and in Tanzania German is read by very few people.