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TEACHING STRATEGIES FOR NIGERIAN SECONDARY SCHOOLS

edited by

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Introduction

Geography, study of earth's phenomena, has come a long way as a school subject. Gone are the times when geography study of was a mere description of the earth's features [gazetteer geography]. Such worldwide innovations in geography curricular also generated series of structural changes, which border on curriculum reforms and on methodological stands in Nigeria. Some of the major reforms in Nigeria as discussed by the National Curriculum Conference of 1969 and the geographical reforms of the 1970 are well highlighted in some existing publications. These reforms have over the years streamlined the scope and nature of secondary school geography into its present state.

Objectives of Secondary School Geography and the Teacher's Role

As a school subject, geography has its objectives strongly focused on the philosophy underlying the aims of secondary education as outlined in the *National Policy on Education* [revised 1985]. The first three of the seven objectives of secondary school geography are: [a] To understand spatial relationships and the character of the earth's surface. [b] To understand the concept of man-land relations (to correlate the life of man with his physical environment and to explain the interactions of human and natural agencies). [b] To organize and formulate concepts according to acquired geographic principles and to apply these to interpret and understand current world ideas. Okunrotifa (1970, 1971)

The nature and scope of secondary school geography make it imperative that the individual should be equipped with several skills, attitudes and values that will enable him live and contribute to the development of his

society. Oluyeba (1981), making reference to some geography scholars, stated that geography engenders in students the development of sound knowledge and understanding of the local and immediate surroundings. This enhances the ability of the individual to move from one place to another and to interpret simple phenomena. It also aids the development of critical thinking and problem-solving skills that enable the individual to approach life situations with ease and an open mind.

If geography is to fully foster the development of these skills, attitudes and values in learners, the prominent role of the teacher is inestimable. He must seek to explore and use current strategies and techniques of teaching that will help him to discharge his duties and effectively impart the necessary skills and values to his students.

Teaching is the "practical business of trying to contribute to the educational development of others" (Ryba, 1975). So, the teacher serves not only as a "communicator" but more importantly as a facilitator of learning. Open to him are various methods, strategies and techniques that can be employed to drive home his point and enhance students' learning. Research has shown that parents and administrators consider the poor teacher to be seriously deficient in teaching techniques. (Tolor, 1973).

As far back as the early 1970s, educators have stressed the need for teachers to use teaching strategies that encourage the learners to inquire, discover and solve problems on their own (Jarolimek, 1971). Open to geography teachers are several methods from which they can choose the most appropriate in teaching any concept or subject matter. Geography scholars have through research findings endorsed the following methods and strategies as ideal: guided discovery method, inquiry method, programmed instruction, mastery learning and advance organizers. These methods are by no means exhaustive, but have one thing in common: they emphasize individuality in problem solving.

Modern Trends in Geography Teaching

The search for the 'good teacher' will no doubt continue to engage the interest of educators so long secondary school subjects continue to be taught poorly in Nigeria and as long as students continue to perform poorly at such external examinations as Secondary School Certificate

Examination (SSCE). In order to improve the teaching of geography at the secondary school level, several scholars have come out with formidable evidence claiming that the solution has been found. However, some of these findings never see the light of day because usually such research efforts are not made public. Even where they are made public, they hardly reach the practicing teachers who should be the consumers.

In this chapter, emphasis will be laid on how to achieve a procedural mode of teaching vis-à-vis learning of geographical concepts in our secondary schools. This is because both teachers and learners play important roles in the teaching-learning process. This would seem to be the cognitive psychologists' view on approach to teaching. Essentially, this view sees teaching as "interactive, a dialectic or dialogic between the teacher and learner". Citing Freire (1981), Sprinthall (1995) contend that students should be seen as "active participants in the process of teaching", while the teacher's role is "to promote the intellectual, interpersonal and social development of the child". Over the years, several strategies have been devised for the effective teaching and learning of geography. Despite teachers' supposed awareness of these new methods, Okunrotifa (1970) citing Bakare (1966) asserts that:

> "Secondary School geography is plagued with geography teachers who overemphasize the inculcation of facts for passing examination ... while worthwhile objectives such as fostering the ability to do critical thinking or the development of the habit of observation, or of geographic imagination and the like have been neglected..."

Most of the methods discussed in this chapter may not be entirely new but have been critically and creatively discussed and repositioned in the realm of geography teaching in the 21st century. At various times, several scholars of geography have made reference to the advantages inherent in their usage in effecting the desired learning outcomes in students. Nevertheless, there is the need in this paper to further highlight the 'what' and the 'how' of these strategies. There is no gainsaying, the fact, that most practicing geography teachers for whatever reasons [e.g. inefficiency, lack of innovation or creativity, etc.] resort to easy teaching methods such as lecture methods. These are methods that do not stimulate students' innovation, initiative inquiry and scientific attitudes. This is the situation that encourage students to resort to cramming of

facts, which, as Faniran (1969) has shown, "are forgotten as fast as they are learnt".

Research findings such as Falaye (1995) reveal that delayed feedback of students' performance was most effective in improving retention of geographic knowledge, while immediate feedback was found to improve students' performance in achievement tests in geography. The reverse was the case when no feedback was given.

Concepts and Models

Concepts are defined as the "mental image of a thing or event" (Faniran, 1969). By its very nature, geography consists of a set of primary ideas and concepts which underlie its structure [Brunner, 1960]. For instance, when some geographical concepts, e.g. location, migration, etc., are introduced at the appropriate point as to reveal real life situation, they are better understood by students.

Faniran (1971) has defined a model "as simplified structuring of reality that present supposedly significant features or relationships in a generalized form". Simply put, a model is a miniature representation of the real world, and it ranges from simple forms such as things constructed from the physical world like relief to very abstract forms such as theories.

Models that are familiar and commonly used are atlases, globes, photographs, maps, cardboard drawings and relief representation. These are known as iconic models. Geographers such as Faniran, [1969], High and Richard, [1970] assert that iconic models are static because they concentrate on structural replication of the real world and thus are of little value to the teaching of geography. Other highly endorsed are hardware models known as "working models" because they concentrate more on performance, function and process of geographic idea or concept. Models make it easy for students to visualize phenomena while enhancing comparison between foreign and local phenomena creating interest in the subject. Examples are stimulation models and analogue models. The more abstract types are mathematical and theoretical models. While the first two are ideal for use at the secondary school level, the latter two are too advanced and so are not pursued in this work.

The random-walk simulation model has been most successfully applied in physical and human geography and especially in the study of drainage network. The main aim of the application of the model is to learn about the processes operating with a view to explaining the observed patterns.

Attempts have also been made to introduce random-walk drainage net or basin to Nigerian schools, since it was first described by Leopold and Langbein (1962) and the results so far have been encouraging. The following procedures are usually followed in the simulation exercise

(i) The hypothetical area is gridded into squares.

(ii) Cards are marked east E, W, N and S, and are chosen at random so as to decide the direction of 'flow' of streams.

(iii) A number of conditions are set, as follows:

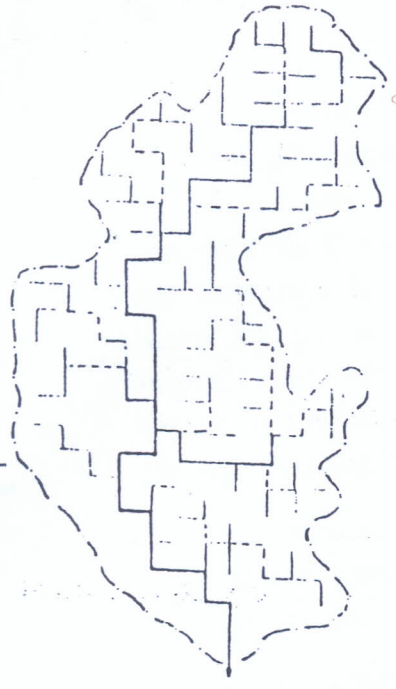
(a) Every square must be "drained"; that is, every square must have an arrow leading out of it;

(b) Streams may not flow back on itself.

(iv) The random selection process is repeated until all squares are 'drained'. The cards may or may not be replaced.

(v) A network of interconnecting 'streams' is produced from the directions of the arrows. Some are shown in Figure 1.

(vi) The pattern produced is compared with real drainage pattern with particular reference to order, number, length, etc. Work done so far shows that there is very close resemblance between the model and the natural basin of identical orders, (Fig. 2). This means that the model can go a long way in helping to make both the nature and the processes involved in the creation of stream patterns clearer. We can, by simple statistical methods, estimate the deviations between the model and real world, and so possibly isolate the chance effects in the creation of natural drainage basin (see Fig. 3). There is no doubt that this is evidently a new way of looking at landscape and landscape development, with particular reference to drainage patterns and their evolution; it affords a simple way of introducing objectivity and quantification into landform study.



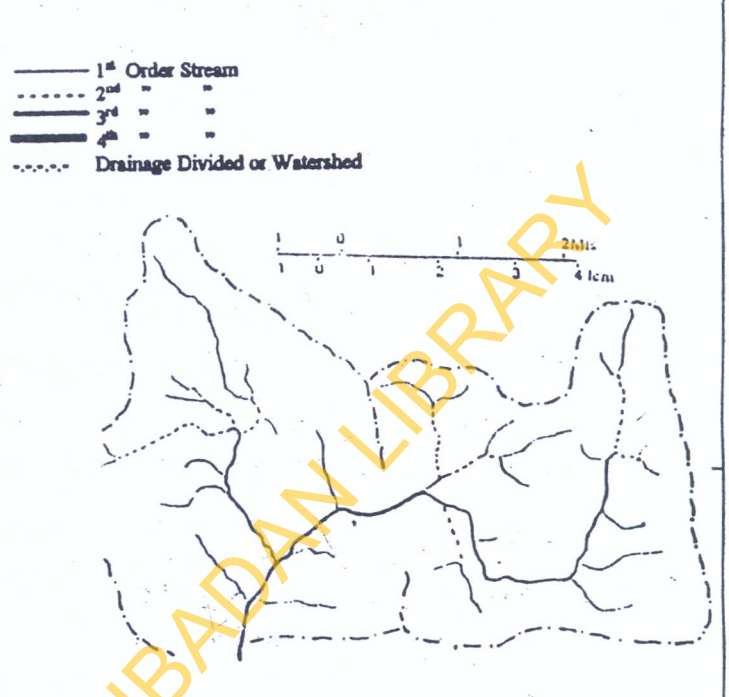


Fig. 1: Simulated Drainage Basin (After Faniran, 1969)

Fig. 2: An example of a 4th Order Stream. River Oshun Sheet 243 SE (Ilesha SE) Western State. Symbols are as in Fig. 1

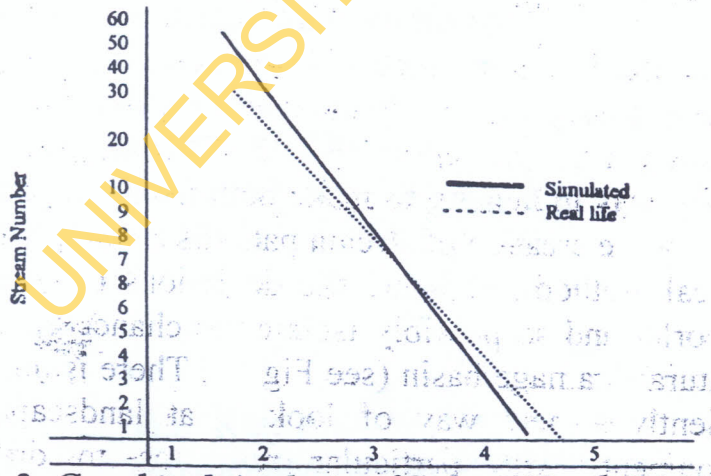


Fig 3, *Graphical Analysis of Stream Numbers (After Faniran, 1969)*

The network produced by the random-walk method has been found to be similar to other patterns and networks, especially those with branching features. The relationship between order, number and length as given by the model is also found to be true of most trees (Milton, 1966).

Unlike the random-walk simulation model, the *operational gaming model* depends basically upon human decisions. The result depends more on skill than on chance. Nevertheless, the method represents a fundamentally new approach to geography teaching. Geographical games are designed to represent an important spur to increase motivation to learn by participation in the classroom, and will not only generate interest and enthusiasm but also lead to better understanding of particular topics and concepts.

(b) Operational Gaming Models

The games described here are meant to show teachers what is involved in operational gaming models. They may be modified or adapted, since the best games are those devised to suit the needs of one's own pupils.

The most popular geographical game in the literature is apparently the "Railway Pioneers" (Walford, 1969, p. 38). The game has been designed for two main purposes:

(i) to teach the processes / problems in transport construction; and

(ii) to indirectly teach certain aspects of the physical and human geography of a place.

According to Walford, pupils assume the roles of hypothetical railroad companies, trying to build transcontinental railways from the east coast of a named country. However, the area and directions may be varied as required. The routes and goals are chosen by the pupils, who will form themselves into groups and share responsibilities, e.g. as manager, treasurer, chairman, etc. The aim should be to run a profitable railway, not simply to arrive at the chosen destination.

The Kim's game (Davies, op. cit., pp. 40-143) is another useful geographical game, especially for revision purposes. The game, originally designed to test how much and for how long children can remember the names of objects shown on a tray, can be adapted to test ability to

remember things already taught. Names of objects and or events can be listed under various headings, e.g. geomorphology, climatology, population, country or regions, etc., and children are made to recall them. The results can be analyzed for various purposes. They can be used to investigate the effect of age, sex, classroom conditions, and so on.

(c) Analogue Models

Analogue models show a functional relationship between the model and the real life situation. They do not show the exact structure of the real world, but tend to explain the principles at work. For example, High and Richards (1970) have this to say about analogy –

> "We are making an analogy between the attractive power of magnets and the impact of a town on the area that surrounds it. ... magnets and towns behave in similar ways and thus it is possible for us to obtain a better understanding of a fundamental idea in urban geography by using a model in which we can actually see this idea in action. ... For example, we might use magnets of differing size and power to represent towns of varying sizes, or we might use additional magnets to stimulate the impact of new towns on the shape and size of existing urban fields of influence".

Two models in human geography

Two of the three models relevant to work in human geography as explained by High and Richards are described below. According to them, they require a minimum of materials for construction and should be well within the capacity of senior secondary school III students to operate aid to analyse the results.

Ink and blotting paper models

These models utilize the characteristics of ink diffusing through blotting paper to illustrate certain gross movement such as migration, etc. on the growth of an area. The analogies in this case are not very precise and the models can only be used to illustrate broad principles. Their strong point is that they allow us to experiment with different types of barriers to movement with good visual effect. Equipment required includes a simple rectangular wooden frame to support a sheet of blotting paper, large sheets of blotting paper, ink and water.

Again, students may be encouraged to experiment by changing the shape or orientation of such barriers, relocating migration centres or mountain passes, even adding whole mountain chains.

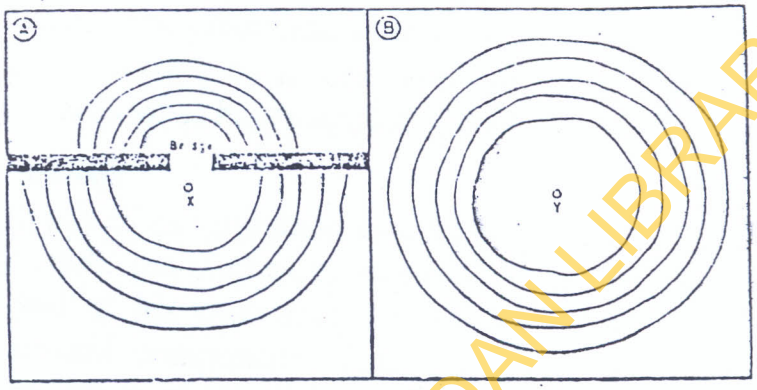


Fig. 4 *Blotting Paper Models of Urban Growth (After High and Richards, 1970)*

2. Programmed Instruction

This method of teaching is highly suitable for making students with different abilities to obtain optimal level of comprehension of geographical concepts. The Nigerian Geographical Association endorsed programmed instruction in 1967 as a new teaching device. It is sad that the method is hardly known among our teachers today.

Okunrotifa made Programmed Instruction [P.I.] popular in the teaching of geography in Nigeria. In his 1972 work, he explained that (P.I.) "is the use of materials or procedures which incorporate an auto-instructional (or self-instructional) programme. It provides conditions under which a student can learn something efficiently with little or no outside help..."

Principles or Characteristics of Programmed Instruction

According to Procztar (1970) and MacKenzie, Eraut and Jones (1970) these characteristics and principles are essentially -

i. an ordered sequence of stimulus items (also called frames)
ii. to which a student responds (that is, individually placed)
iii. his responses are reinforced promptly due to knowledge of results
iv. progresses in small steps.
v. thereby making few errors and practicing mostly correct responses.
vi. from what he knows, by a process of successively closer approximation, towards what he is supposed to learn from the programme.

Types of Programmes

There are two types of programmed instruction: 'linear' and 'branching'. In the first approach, the student moves in a linear fashion from item to item (frames) and at his own speed. Here each stage called an 'item' comprises of several components. Each small piece of information is followed by a question on the information provided. The question is so phrased that the student can process the information given and provide a correct response. The student replies either in writing or orally. If the response is correct the automaton or workbook asks him to go on to the next item (frame) or checks the next frame for the correct answer. The student is thus pleased and encouraged (reinforced) with correct response and he goes on. He then comes across another piece of information and follows the above processes again. However, if the student gives a wrong response, he is asked to go back to an item where more information will be provided. At this point, he may proceed to the next item or be asked to go back to the same question he missed. This is called "Branching". This approach also allows a student who can move fast to by skipping some frames as long as comprehension is not affected.[1]

The Medium of P.I.

Various media are open to the teacher here. One may decide to use the medium of paper-and-pencil type or the automaton. The latter comes in the form of a machine, although the computer does this well nowadays.

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[1] The procedure being described here tallies with that presented in Chapter 7 where the use of the computer for teaching was discussed. -- *Editor*

[see chapter 7]. For pragmatic purposes, the paper-and-pencil medium would seem more ideal for Nigerian schools as of now.

Practical Processes of Programming a Geographical Lesson

In P.I. the teacher's role as a 'communicator' of the didactic message or content of the lesson is essentially taken over by a device called a medium (Procztar 1970). Consequently, it is imperative that the teacher should follow certain procedures in arriving at good programmes. MacKenzie, Eraut and Jones (1970) indicated the following sequence as essential in the preparation of good programmes. We have however elaborated upon them in this article for better understanding.

(i) formulation of lesson objectives.
(ii) design and testing of appropriate criteria measures to determine when the objectives have been achieved.
(iii) definition of the target population (class)
(iv) analysis of learning tasks (learning materials).
(v) preparation of prototype programme (initial programmes that will be trial tested).
(vi) developmental testing of programme (a trial testing of the programme to remove ambiguities)
(vii) validation of programme (to collect data that indicate the validity or effectiveness or the programme)

The following processes from Okunrotifa (1972) basically illustrate how to prepare a geography programme in Map Reading. Since the aim is to improve on their teaching you will observe that the unit of lesson under discussion in the programme is inconclusive. It is assumed that the steps so highlighted are adequate enough to explain the principles. Furthermore, in the example of programmed text shown here, more frames are arranged on a single page for the sake of convenience, but in a normal programmed text one shown frame should come after the other sequentially arranged such that only the information in one frame is visible to the students at a time.

Some Map Essentials (After Okunrotifa, 1972)

ANSWER		Frame
	Lesson 1 starts here You can learn many things about the world by reading maps. For example, you can learn about the land, peoples and climate of Nigeria by reading a _____ of Nigeria.	Fra me 1
ANSWER map	You can learn about where the Hausas, Yorubas and Ibos live by _____ a map of Nigeria.	2
ANSWER reading	You know flow to read books. This lesson and others to follow will help you to learn to _____ maps.	3
ANSWER read	Each book you read has a 'name' by which it is known. The 'name' of a book is called its title. A book is always known by its _____	4
ANSWER title	"Treasure Island" is the _____ of a book.	5
ANSWER title	The title of a book tells you what the book is about. Maps also have titles. A map is always known by its _____	6
ANSWER title	The title of the map in FIGURE 1 is _____.	7
ANSWER Nigeria	The fine of a map can tell you two things: 1. the name of the area 2. the kind of information shown on the map In FIGURE 1, the name of the area is Nigeria andthe information shown on the map is about _____	8
ANSWER title	The table of contents in your book tells you about each chapter in the book. The symbols used in the map are shown by the _____	9
ANSWER key	The key to a map tells you about the used in the map.	10
ANSWER symbol	A symbol may be: a drawing, e.g.  = tree or a colour, e.g. = black The symbol: ═══ stands for _____.	11
ANSWER road	In Figure 3, the key tells you that the meaning of the symbol: is _____. The key also tells you that means _____.	12

3. Advance Organizer

There is a distinct chapter on advance organizer in this book. So readers should take advantage of a good serious of that chapter.

4. The Use of Quantification in the Study of Geography

Quantification simply means the assigning of numerical values to things or the application of mathematical rules and formulae to studying geographical concepts. Quantitative techniques have been satisfactorily introduced into physical geography in areas as the study of climate, and in map reading topics such as the calculation of gradients, profile scales and slope measurement from topographical maps.

Also introduced into secondary school geography are some elements of statistical methods mostly in use in practical work in geography. It involves basic processes such as collecting, organizing, summarizing, presentation and analyses of geographical data.

From this writer's observation of secondary school geography teaching, topics that have to do with quantification are either poorly taught or are delayed till the final year, or are altogether abandoned. These topics, also, seem to be those that are difficult for students. To make headway out of this problem, it is imperative on the one hand, for practising teachers to create awareness in students of the inter-relatedness of school subjects at this level rather than regard each subject in isolation. On the other hand, knowledge in one subject is beneficial in the understanding of another. For instance, knowledge gained in Mathematics is very crucial to the understanding of some geographical concepts or ideas. Teachers should, therefore, assist students in seeing where such application is possible.

How to Improve Quantification and Statistical Skill Acquisition

Basic mathematical quantification for computing some map work topics or topics such as rainfall or temperature readings, etc., which involve either calculation and conversion of one scale to another, and estimation of the actual scale from the scale on paper, should be carefully planned and taught to students with copious exercises. This will ensure that students comprehend them thoroughly.

Similarly, fieldwork provides the necessary avenue for students to use quantification and statistical skills. Much of the use that students will put these skills into will depend on the attitude of both teachers and students to fieldwork. It is therefore suggested here that when students are exposed to firsthand experiences as in fieldwork. They are to be equipped with materials with which to gather data in the field, while having eyes for details. They should realise that they would write reports later. Information so gathered can be quantified and with or without the teacher's assistance. The information can further be trans-formed into graphical representations. Students in SS III should be introduced to observations involving relationships between geographic features.

5. Application of Scientific Methods to Problem-solving

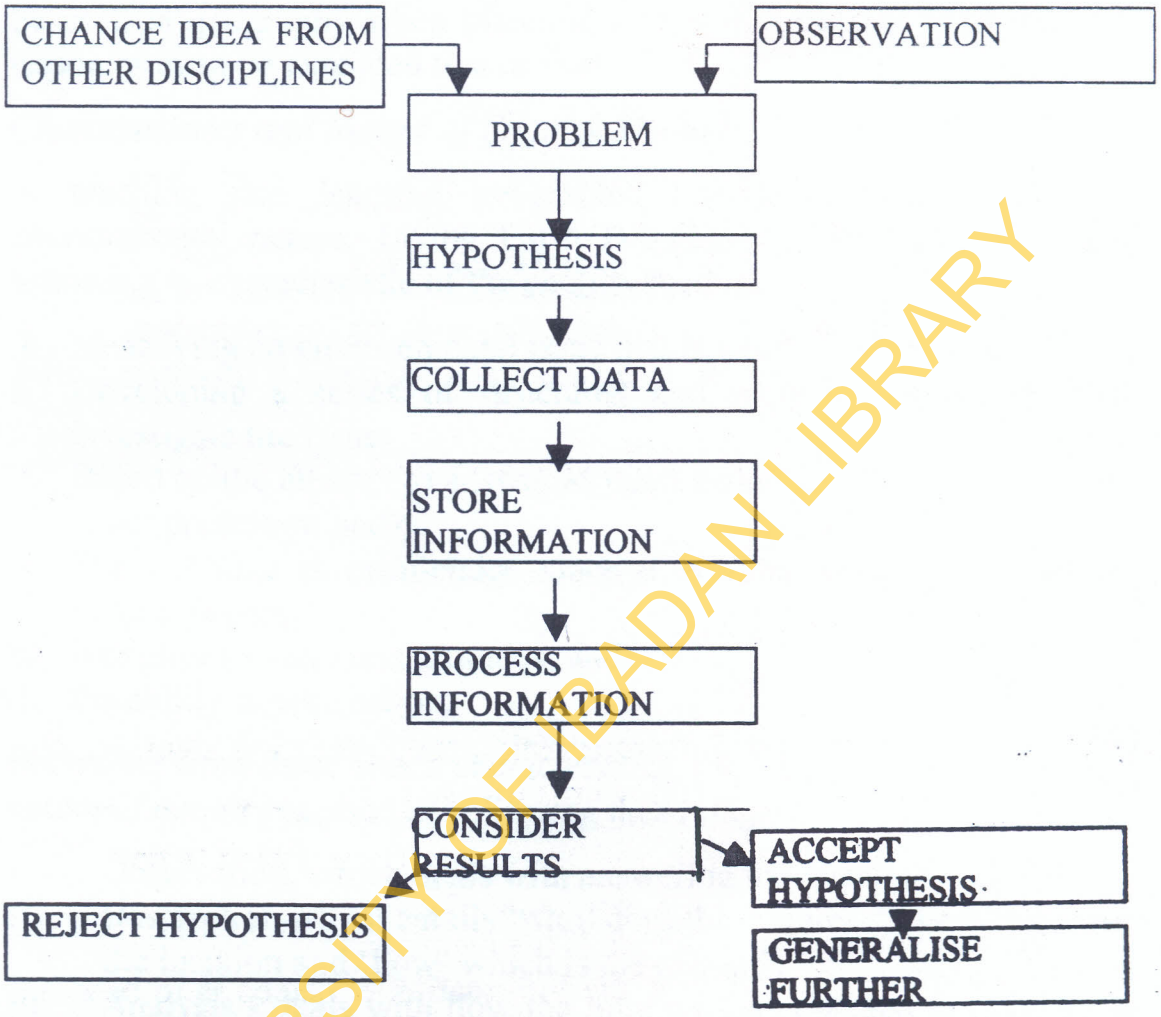
Geography scholars have persistently favoured the use of newer styles of teaching in which students are more "explicitly involved" in their own education. Teacher dominated teaching makes students passive. Explaining the demerits of such teaching methods on the learner, Ryba (1975) asserts that such is bound to be boring and educationally unproductive.

Modern day geography by virtue of having gone through scientific re-organisation emphasises the development of inquiry and problem-solving attitudes and skills in students. Problem solving is a systematic approach to solving problems of a varied nature. The students' personal solution as he employs alternatives is the primary focus in problem solving, while the teacher provides practically little or no aid in process.

In geography, the enquiry method in problem solving is well articulated in such scientific processes as observation, definition of problem, hypotheses formulation, collection of data, etc. Okunrotifa (1971 and 1977) stresses that modern geography requires that students should show ability to observe phenomena and record them, prepare accurate maps from the observations, describe an area they have worked and formulate and test hypothesis in relation to the data collected.

The procedure is based on the assumption that self discovery aids better understanding and high retention of learnt information. It involves the presentation of a problem to the student who tries to find answers to them. Okunrotifa (1969) observed that the student then discovers the

concepts around which the activity or problem is built. The problem-solving approach in geography identified by J.P. Cole is presented here.



In the problem-solving model presented, the nature of the geographic problem is varied. It could range from physical, political, economic, social to environmental. The teacher should allow the solution to come from the students while he watches and acts as a guide. If the problem is not solved within a given class period, the teacher could use the next period. It is no use hurrying through the syllabus; getting the skill matters. It is the duty of the teacher also to teach the students the skills of good problem-solving processes.

6. The Method of Enquiry

The enquiry method is most suitable for dealing with issues of environmental nature. While it cuts across all subjects, it could, however,

be used in geography when planning a unit of work that is to last one lesson or even be extended to a project.

Characteristics and Nature of Enquiry Method

In teaching and learning geographic knowledge that border (in environmental nature, Living Earth Foundation (1994) identified the following as characteristic of the enquiry method.

i. Identifying an environmental issue that is worth investigating;
ii. Developing a series of structured and sequential questions that investigate the issue;
ii. Based on the attempt to answer an open-ended question (i.e. outcome is not predetermined);
iv. The outcome is open-ended since it is open to several views by several people;
v. it explores values and attitudes; and
vi. the ability to take action.

Following from these stated characteristics, the foundation identified the nature of enquiry method as following these stages:

i. Observation, which deals with answering the question 'what'
ii. Description which entails 'who' does the enquiry, 'where' refers to the location and 'how' which is the methods.
iii. Analysis - deals with how the information collected is to be dealt with to produce results.
iv. Prediction - entails peeping into the future to decide what might be.
v. Conclusion – has to do with what should be.
vi. Action - answers the question of what will be, that is the alternatives that are open.

To carry out a good enquiry, questions could be asked along the following lines as suggested by Living Earth Foundation (1994):

i. What is the issue about?
ii. Where is the issue taking place?
iii. Why has the issue arisen?

iv. Who are the people involved in the issue?
v. What are the views about the issue?
vi. How is the issue connected to global issues?
vii. What are the alternative solutions to the issue?
viii. Who has the power to make a decision?
ix. What do you think should be done?

Questions asked along these line will not only expose the students to acquire research skills, they will lead students to formulate and make informed decisions, besides appreciating working in groups with others and respecting the view points of others.

What the practicing teacher needs to do here is to observe topics in geography that are amendable to this approach. Many topics abound in physical, human and regional geography. Take for instant, topics as green house effect, global warming, characteristics of rivers, soils, acid rain, and so on, very well lend themselves to the enquiry method. Such topics could be allocated to students individually or in groups under the supervision of the teacher. The amount of information that will be acquired and the number of human problems that will be solved within a short space of time will be highly inestimable.

Implication of for Learning in Nigerian Secondary Schools

The various strategies and methods advanced for teaching and learning geographic information in this paper has implications for the future advancement of geographic knowledge, skills and positive attitude development for the secondary school leaver in Nigeria. Whichever method or strategy a teacher adopts in teaching a geographical concept, idea or topic depends to a large extent on the teacher's view of his/her role as a facilitator or custodian of knowledge.

The review of these various strategies are intended to bring about a break in the present status of teaching geography in Nigerian Secondary schools. Despite the constraints that may be placed by the system, it is the contention of some educationists such as Pocztar (1970) that change is essential especially change form the old ways of preparing lessons.

References

Ausubel, D.P. (1960) The use of Advance Organizers in the learning and retention of meaningful verbal materials. *Journal of Education/ Psychology,* Vol. 51, No 5, 267-272.

Bakare, G.M. (1966) "A Critical Analysis of some Aspects of Geography Teaching in Western Nigerian Grammar Schools" M.Ed. Dissertation, University of Ibadan, Ibadan.

Baird, I.L. (1973) Teaching styles: An exploratory study of dimensions and effects. *Journal of Education Psychology.* Vol. 64, No. 1, 15-21.

Brunner, J.S. (1960) *The Process of Education.* Vintage Books, Random House, Harvard University Press.

Davies, J. J. (1968) *On the Scientific Method.* London, Longmans and Green, 166pp.

Falaye, F.V. (1995). Comparative Effectiveness of Delayed and Immediate Feedback on Senior Secondary School Students' Performance in Geography. *Unpublished Ph.D. Thesis,* University of Ibadan, Ibadan.

Faniran, A. (1969). The use of concepts and models in Geography teaching in Nigerian High School. In Majasan, J.A. (eds) *New Dimensions in Nigerian High School Geography.* University of Ibadan, 58-82.

Freire, P. (1981) *Education for Critical Consciousness.* New York, Continuum.

High, C. and Richards, P. (1970) "Some dynamic hardware models for teaching *The Nigerian Geographical Journal.* Vol. 13, No.2, pp.201-210.

Jarolimek, J. (1971). Social Studies educations: Trends. In Crowell-Collie'. *Encyclopedia of Education* pp. 281-286.

Leopold, L.B. and Langbein, W.D. (1962). Certain aspects of the expansion of quantitative methodology in American geography. *Annals of the Association American Geog,rapher,* 57, pp. 423-436.

Living Earth Foundation (1994) Living Earth: A *Resource for Learnning.* London, Hodder and Stoughton.

MacKenzie, N., Eraut, M. and Jones, H.C. (1970). New resources for learning, *Prospects in Education,* Vol.1. No.3 pp.47-57.

Majasan, J.A. (eds) (1969) *New Dimensions in Nigerian High School Geography.* University of Ibadan, Ibadan.

Majasan, J. A. (1970) (eds) *Curriculum Innovation in Nigerian High School Geography.* University of Ibadan, Ibadan.

Mead, W.R. and Brown, E.H. (1962) *The United States and Canada,* London.

Milton, L. E. (1966) The geomorphic irrelevance of some drainage net laws. Australian Geographical Studies, Issue 1, Vol. 2, pp. 85-95.

Federal Republic of Nigeria (1985). *National Policy on Education.* Revised, Federal Government Press, Lagos.

Oluyeba, N. F. (1981) An appraisal of Trends in Performances of Students in Geography at the School Certificate Examination between 1976 and 1980 in Ondo State. *Unpublished M.Ed Dissertion,* University of Ibadan, Ibadan.

Okunrotifa, P.O. (1969) Modern trends in Geography and their implications for curriculum reform in High School Geography. In Majasan J.A. (eds) *New Dimensions in High School Geography;* University of Ibadan, Ibadan.

Okunrotifa, P.O. (1970) The objectives of Geographic education. In Majasan J.A. (eds) *Curriculum Innovation in Nigerian High School Geography.* University of Ibadan, Ibadan.

Okunrotifa, P.O. (1971) "The Aims and Objectives of Geographic education" *The Nigerian Geographic Journal.* Vol. 14 No. 2, pp. 221 – 230.

Okunrotifa, P.O. (1977) *Evaluation in Geography.* Ibadan, Oxford University Press, Nigeria, 138 pp.

Okwilagwe, E.A. (1986) An Experimental Study on the Effects of Advance Organiser as a Motivational Strategy on Academic Achievement of Secondary School Geography Students. *Unpublished M.Ed Dissertation,* University of Ibadan.

Procztar, J. (1970) "Programmed Instruction" *Prospects in Education.* Vol. 1, No. 3, pp. 21-29.

Ryba, R. (1975) "Approaches to Economics teaching". In N. Lee (eds) *Teaching Economics,* 2nd (ed). London, Heinemann Educ. Books Ltd.

Sprintall, N. A. (1995) Teaching, Cognitive development. In T. Husen and T.N. Postlethwaite (Eds) *The International Encyclopedia of Education,* 2nd Edition. Vol. 10, pp 6164-6165.

Tolor, A. (1973) "Evaluation of perceived teacher effectiveness" *Journal of Educational Psychology* Vol. 64, No. 4, 98-104.

Uwadiae, I. (1997). School Factors as Determinants of Examination Malpractice in the Senior Secondary School Mathematics Examination in Nigeria. *Unpublished Ph.D Thesis,* University of Ibadan, Ibadan.

Walford, R. (1969) "Operational games and geography teaching" *Geography.* 54 (2), pp. 34-42.