

THE IMPACT OF MODERN GEOGRAPHIC THOUGHT ON  
GEOGRAPHY EDUCATION IN NIGERIAN  
SECONDARY SCHOOLS

BY

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D E D I C A T I O N

To the sweet memory of His Royal Highness  
Oba Daniel Anirare Akomolafe Aladesanmi II, the  
Ewi of Ado Ekiti whose reign was characterized  
by peace, progress and prosperity in the town.

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A B S T R A C TTHE IMPACT OF MODERN GEOGRAPHIC THOUGHT  
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"A geography educational gap" between the universities and the secondary schools had been alleged (Broek, 1969; Ola, 1978). It was assumed that the "conceptual revolution" that predominates geography education at the tertiary level of our educational system has not taken root in our secondary schools. The new geographic thought otherwise labelled "conceptual revolution" (Davis, 1972) is characterized by increased use of ideas, about space, that can be applied generally. The need for such new geographical ideas being generated in the universities to have a trickle-down effect on the secondary schools **has** been emphasized (Ojo, 1978).

This study therefore investigated the extent to which the new geographical concepts and practices affect geography education in the secondary schools. The "geography teachers" use of the new geographic knowledge in five major contexts

were examined. The contexts include: statement of lesson objectives; approaches to geography lesson delivery; evaluation of geography lessons; students responses to evaluation questions, and the literature in use.

The rationale for the study is that whereas the function of secondary school geography as preparatory for living is important, the same education in geography is also preparatory to university geography. That being the case, both levels of education should be interrelated and interdependent. Besides, where secondary school education is terminal for a student, the quality of secondary school geography already received by him considerably determines the extent to which he can cope with geographical problems and utilize or appreciate geographical opportunities. Also the study was intended to shed some light on the needed innovations in secondary school geography curriculum.

A panel survey design defined by Labovitz and Hagedorn (1971: 62) as "repeated observations on the same sample over a period of time" was adopted for the study. The target population



consisted of all geography lessons delivered in Nigerian secondary schools. A multi-stage, stratified random sampling technique was used to randomly select ten secondary schools from five randomly selected states of Nigeria namely: Plateau, Lagos, Ondo, Kano and Kwara. A preliminary investigation was conducted in ten states of the federation to assess geography teachers awareness of the new trends in geography education. The result of the Pilot Study showed that four categories or types of geography teachers are in the Nigerian Secondary Schools namely: Non-graduate Untrained Teachers (NUT); Non-graduate Trained Teachers (NTT); Graduate Untrained Teachers (GUT); and Graduate Trained Teachers (GTT). Also, in the pilot study, more than ninety eightper cent of the geography teachers indicated "conceptual revolution" as the main feature of modern geographic knowledge.

The Geography Lesson Observation Schedule (GLOS) for intensive geography lesson observation was administered periodically and repeatedly for about nine months. 256 separate geography lessons were observed. Chi-square ( $\chi^2$ ) analysis; analysis

of proportion, and percentages were the main inferential and descriptive statistical techniques used to analyse data collected.

It was discovered that the four categories of geography teachers differed significantly in their formulation of geography lesson objectives and in their geography teaching approaches. However not significant difference, in **presentation of current ideas in geography was found between all trained** geography teachers and all untrained geography teachers put together. Also, it was discovered that students' participation in lessons differed significantly in regional geography lessons; systematic geography lessons and conceptual geography lessons. It was also found that there was a relatively higher proportion of lower order cognitive evaluation questions over the higher order cognitive evaluation questions used by all geography teachers to evaluate geography learning.

However, the hypothesis that "the proportion of the students' lower order cognitive responses to both lower order and higher order cognitive

evaluation questions would not be less than 0.5" was accepted. It was discovered that about forty one per cent of the 256 geography lessons observed were conceptually-based meaning that approaches to geography teaching and the content of secondary school geography are gradually being modernised. However, it was found that variables like lesson objectives; evaluation of geography lessons; students responses to evaluation questions; fieldwork activities and textbooks did not reflect the new changes that have started to affect both the teaching and content of secondary school geography.

The study highlights the need to revise the present secondary school geography syllabus. It also accentuates the need to review very critically the present mode of evaluating students' learning in geography especially in examinations conducted by the West African Examinations Council.

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## CHAPTER I

### THE PROBLEM

#### 1.1 Introduction: History of Geographic Thought

Geographic thought is as old as man. The day the early man preferred the river valley to the caves and the tree tops, he started seeing the variable character of places and the earth phenomena from different perspectives. The description and interpretation of the variable character from place **.to place of the earth as the world** of man has been described as the central theme of geography (Hartshorne, 1960). Thus Herodotus (484-425 B.C) tried to adopt the cause-effect analysis theory to explain the formation of the Nile Silt and the Nile Delta. Erastosthenes (276-194 B.C) devised a means of spatial location of the earth's phenomena by the use of lines of latitude and longitude. Strabo (64 B.C. - AD 20) attempted an encyclopaedic description of the known inhabited world - the Ecumene. Ptolemy (C. A.D. 150) produced the first cartographic illustration of what he called "TMAGO MUNDI" -



image of the world. Ptolemy's map was a reference world map for many centuries after.

The Middle Ages and the Period of Renaissance witnessed some changes in geographic thought. There was a gradual move from atmo-lithospheric description to anthropocentric view-point. This means a shift from description of physical earth phenomena to an analysis of man in space. Ibn Batuta (1304-1368) a renowned Arab scholar and traveller disproved Aristotle's idea of "the inhabitable **torrid zone** beyond the Sahara". Ibn Khaldun (1332-1406) concentrated his efforts on the nomads, settlers, oasis dwellers and the mobile warriors. He dealt extensively with the culture and the modes of life of these people. The Renaissance witnessed the revival of classic geographic thought. Ptolemy's geography was translated into Latin in the fifteenth century. The Portuguese and Spanish explorations and the subsequent reports thereon further stimulated the interest of many European geographers in acquiring more facts about the unknown parts of the world. Man and his physical environment became the foci of scholars' attention. The foundation of the dichotomy that plagued

geography for many centuries was therefore laid.

The dichotomy was accentuated by Varenus (1622-1650) when he postulated that geography was made up of two parts: the physical aspect which dealt with scientific exactitude and the human aspect which was more concerned with probability statements. This view-point generated a lot of arguments in the nineteenth century when an attempt was made to exclude man from the field of geography since human behaviour, according to many scholars, did not appear to be subject to general laws because of the unpredictable nature of man. The arguments became more pronounced when Charles Darwin propounded his theory of evolution in his "Origin of Species" (Darwin, 1859). Darwin placed emphasis on environmental determinism an idea which was quickly embraced by Ratzel (1844-1904). Environmental determinism presupposes that it is the natural environment that determines and/or influences man's existence and man's economic activities in any given place.

Ratzel's ideas were later disseminated in America by his pupil, - Ellen Semple (1863-1932).

Morris Davis (1850-1934) contended that geographical studies should include the study of all natural features of the earth's surface and the effects of such natural features on man and his activities. With these ideas, segmentation of the American academic geography became firmly established about 1900. In Germany the nineteenth century debate got to a crisis point when Von Richthofen (1883) suggested that geography should go back to its "chorological base; thus limiting geographers to "place description". Richthofen's pupil, - Alfred Hettner (1859-1941) vigorously supported this proposal.

In Nigeria, geography was already a popular subject in most Nigerian schools in the late thirties. The use of compass and sketch maps by explorers; geographical surveys conducted by Lugard, the explorers, and the missionaries; were some of the geographical activities performed before geography finally took a firm root as a discipline. As rightly pointed out by Ojo (1978), echoes of geographic knowledge had been heard in many parts of Nigeria before 1942. During the

period, there were many textbooks written by British geographers like Dudley Stamp, and Stembridge. A few local geographers, especially Kaine, made valuable contributions to geographic literature. However, the totality of the pre-1948 activities in geography relating to Nigeria whether from inside or outside, in the words of Afolabi Ojo (1978), amounted to little or nothing more than a prelude to geographic thought in Nigeria.

In the schools, just before 1948 when geography as a university discipline was introduced in the University College, Ibadan, geography was taught in both primary and secondary schools in the form of romantic description of features of Western Europe and Australia in particular and the British Empire in general. This has rightly been referred to as "Capes and bays geography" by Majasan, (Majasan, 1969). The pre-1948 "geography" in Nigeria was probably based upon the political sentiments of our imperial lords. In most schools, geography teachers dealt more with isolated geographical topics than with integrated geography syllabus.

In terms of the development of definite geographic thought in Nigeria, University College, Ibadan could be regarded as the nerve centre and watershed of the Nigerian geography. This means in effect that right from the planting phase of geography as a discipline in Nigeria (Ojo, 1978) geographical ideas had to be generated and disseminated from the Tertiary level of our Educational System. For example, some valuable ideas about the nature, spirit and purpose of geography are contained in Garnier's presidential address to the Ibadan Branch of the Nigerian Geographical Association on 14th November, 1955 and reiterated in 1957. Garnier (1957: 3) expressed the nature and dimensions of geography in this way:

"Geography is a subject which aims at understanding the differential character of the earth's surface. Put more simply, it tries to find out what places are like. This is the objective which has been before famous geographers from the day of Erastoshenes and Strabo to the present time. There are many ways of achieving this aim and so we find that there are many kinds of geographers. Some are particularly interested in the physical aspect of their subject: they study land forms, or soils, or plants, or climates. In doing so they try to find out how these aspects of the world's character vary from place to place. At the same time, there are

others who are especially interested in human activities: they examine agriculture, transport, trade and so on. But they too are concerned with what the features are like from place to place, and how they have helped to make one part of the earth's surface similar or dissimilar from another. For it is this aspect of knowledge, the emphasis on how things are inter-related to give character to areas, which distinguishes geography from other subjects and which distinguishes the work of geographers from that of other scientists."<sup>1</sup>

From the foregoing it can be seen that right from the inception of geography in Nigeria there has been a sort of compartmentalization of geography into physical geography and human geography. Garnier as a climatologist and Pugh his colleague, as a geomorphologist were concerned mainly with "what" and "where" in geography. In other words they were concerned with the study of certain earth phenomena and their locations.

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<sup>1</sup>Garnier, B.J. (1957) "Geography and National Development". Nigerian Geographical Journal, Vol.1, No.1, pp.3-6.

N.B. Garnier was the first Professor of Geography in Nigeria.

These viewpoints were later modified by Barbour (1963) when he asserted:

"The geographer has been defined as one who attempts to answer three questions concerning any phenomena that he wishes to study, namely: what? where?, and why? He defines his subject matter, he describes where it is to be found and he attempts an explanation of how this has come about. The three questions that he poses are inter-related and the most important of them is the second. I think all geographers would agree that without location of the objects studied, a truly geographical approach to any problem cannot be said to have begun".<sup>2</sup>

With Barbour's ideas, a new dimension was introduced into the Nigerian geography. It became necessary to give explanations to both earth's phenomena and their locations.

About 1973, Ojo increased the number of questions a geographer should ask from three to five. To the previous questions of what? where? and why? he added when? and how? (Ojo, 1973). He summarized his ideas in these words:

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<sup>2</sup>Barbour, K.M. (1963) "Geography in Nigeria". Presidential Address, Nigerian Geographical Journal, Vol.6, No.1, pp.3-16.

"Evidently it is only when geographers can tackle and solve the 'why' and 'how' questions that they can become really imbued with foresight and the other necessary qualities for prediction. This is a condition precedent to being able to get to the next stage which consists of manipulating events to produce maximum benefits for the greatest number of people."<sup>3</sup>

With this declaration, coupled with similar, subsequent and/or earlier ideas advanced by eminent scholars, Nigerian geography in the early seventies, had entered the main stream of modern geographic thought and practice. Mabogunje (1969) advocated vehemently increased use of statistical methods and quantification in geography teaching. This development has also modernized geographical ideas and practices.

Geography today is no longer the 'Capes and 'Bays' geography nor the geography of Western Europe and Australia (Majasan, 1969). It is no longer the chorographic, traditional geography characterized by cataloguing of facts about the earth's phenomena (Akinola, 1975). Geography is no longer a science of earth's description nor is

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<sup>3</sup>Ojo, G.J.A. (1973) The Cultural Dimension in Geography, An Inaugural Lecture, University of Ife Press.



it a study by spatial location and spatial distribution of the earth's natural phenomena. Geography today is more conceptually based. It is designed to equip students with a range of skills and mental ability to identify human spatial problems. It has, consequently, adopted in an increasing degree the scientific method of observation and analysis with a view to making generalizations and predictions. This development has enriched and modernised considerably the Nigerian geographic thought characterized by spatial, systematic analysis of earth's phenomena using integrated concepts.

#### The Uses of Geography

Geography is that subject in the school curriculum that looks at man's problems and opportunities through a spatial perspective. Most of man's problems and opportunities are spatial. Problems of location, transportation, housing, traffic flow and natural resource distribution are problems that are associated with the quantity of space. Air, water and land pollutions, depletion of natural resources, all forms

of environmental deterioration coupled with either conscious or unconscious dislocation of the ecological equilibrium by man through his destructive, constructive or consumptive economic activities are all problems of spatial or environmental quality. Other spatial problems of political and/or socio-economic origin include problems associated with internal and external migrations; increased urbanization and urban parasitism; dualism in regional development, inter-regional trade activities; natural resource distribution and the effect of such distribution on political and socio-economic decisions. In the normal processes of nature, man and his physical environment do not always maintain a continuous, cordial relationship. While man sets a sort of disequilibrium into the ecosystem, nature too displays some hostilities exemplified by earth tremors, volcanic eruptions, landslides, flooding, destructive storms, tornadoes and hurricanes, soil erosion, and harsh weather. There is also population pressure on land. According to Clarke (1972: 13) approximately sixty three per cent of world population live on only ten per cent of the world land. About

eighty percent of the world population cluster between latitudes  $20^{\text{ON}}$  and  $60^{\text{ON}}$  of the equator while only about ten percent of the world population inhabit the southern hemisphere south of latitude  $20^{\text{OS}}$ .

Geography studies the cause, course and consequences of these diverse problems with a view to finding solutions to them to the benefit of man. This explains in part why modern geography has been described as "problem-solving" or "problem oriented geography" (Okunrotifa, 1977; Majasan, 1969; Ojo, 1970). Geographers are "trained", they are not "taught". A well trained geographer can play many vital roles in the political and socio-economic set up of the society. He can use his geographical knowledge, attitude and skills in such areas as urban, economic rural or regional planning, census, war prosecution, consultancy, teaching, agriculture e.g. agrometeorological studies, research, estate-management, surveying, administration, business management and foreign diplomacy. A study carried out by Ologe (1977) showed that teaching which used to be the traditional career outlet for geographers had seized

to be so. In 1974, nineteen percent of the Ahmadu Bello University geography graduates went into teaching as opposed to only eight percent that opted for teaching in the following year, 1975. According to Ologe's findings, urban and regional planning as a career outlet attracted the highest percentage of the geography graduates in 1975. This was followed by teaching, general administration, and "business, commerce and co-operative management" respectively. From the foregoing, one can see that geography is more than a mere school subject and it is not, as many people think, a kind of rag-bag of general knowledge concerned with the names of continents, countries, capital cities, highest or lowest mountains and the deepest or the shallowest lakes of the world - the so called "nuts and bolts geography" (Ring, 1979) or what one might call the reporters' geography of the age of discovery.

## 1.2 Background to the Problem

By the early seventies, geography had entered what Ojo (1978: 5) called "the consolidation phase". At this period, a lot of curricular

innovations were introduced into the content and methodology of the subject at the university level. Geographers in the universities became more concerned with geographical ideas that could be applied generally in solving human problems than with isolated facts about the earth's phenomena that are spatially located or distributed. There was an intensive use of statistical techniques in geographical studies. The following sample of final degree examination question throws some light on the quantitative/scientific approach to the study of both individual and generic locational factors especially at the inception of modern geography in Nigeria.

"The mean skin temperature of a road worker was found to be  $91^{\circ}\text{F}$  while his rectal temperature was  $98.4^{\circ}\text{F}$  before he started duty at 8a.m. on a sunny day. After working for one hour, it was found that his skin temperature has risen to  $95^{\circ}\text{F}$  while his rectal temperature remains the same. The metabolic heat which was  $550 \text{ Kcal hr}^{-1}$  increased by 40% while the conductive-convective heat loss which was  $300 \text{ Kcal hr}^{-1}$  decreased by 50%. The absorbed solar heat load is also increased from  $150 \text{ Kcal hr}^{-1}$  to  $550 \text{ Kcal hr}^{-1}$ . With regard to the foregoing, answer the following questions:

- (a) If the thermal conditions of the body is at equilibrium, find what amounts of heat are lost through evaporation at both periods, if the air temperature was increased from 77°F at 8a.m. to 87°F after the expiration of the period.
- (b) If the evaporative heat loss through respiration is represented by the equation  $0.324 (64 - e_a)$  Kcal hr<sup>-1</sup> where  $e_a$  = vapour pressure of the air (mm Hg), find what proportion of the total evaporative heat loss is lost through respiration when  $e_a$  is 22 mm Hg."<sup>4</sup>

This new thinking has persisted since then. The following two evaluation questions show that the age of scientific approach to the study of geography in Nigeria has arrived.

- 1. "In what ways do topological concepts extend our understanding of spatial systems? outline the stages involved in the computation of shortest path matrices and indicate their value to geographical analysis."
- 2. "The use of probability models which generate random patterns is predicated on the assumption that random processes

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<sup>4</sup>B.A/B.Sc. (Educ.) Hons. Degree Examination, University of Lagos, 1973, Geography VI Climatology, Question No. 7.

would generate random patterns" (Adalemo, 1977). How realistic is this assumption? Discuss the basic principles and application of trend surface analysis to the understanding of complex spatial pattern."<sup>5</sup>

The problem-oriented and problem-solving objective of the new geography; the concept-based nature of its content; and quantitative, and probabilistic statistical dimensions of its methodology and evaluation have transformed geography into a more useful subject. Geographers can now conceptualize spatial problems, study them, make generalizations on them, formulate theories and make predictions. In other words, geographers are now better placed to conduct useful and relevant empirical studies. The purpose of modern geography is to make a positive contribution towards making the earth a comfortable place for man to live in.

These new developments are not new to most geography teachers in Nigeria. In a pilot study

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<sup>5</sup>B.A/B.Sc. (Educ.) Degree Examinations, University of Lagos, July 1982, GRY 304 Analytic Geography Questions 2 & 8.

conducted by this researcher, it was discovered that about 98% of the geography teachers polled for the study indicated clearly the new changes that have taken place in geography.

For the pilot study, forty different schools were selected in ten states of the federation using the multi-stage stratified-random-sampling technique.

About 204 geography teachers in thirty four schools of the ten different states responded to "the modern geography characteristic questionnaire" administered by the researcher. The major characteristics of modern geography were ranked in descending order of relevance by the geography teachers as follows:

- |                              |            |
|------------------------------|------------|
| 1. Emphasis on local studies | 116 points |
| 2. Conceptualization         | 112 points |
| 3. Use of models             | 107 points |
| 4. Socialization             | 100 points |
| 5. Problem solving studies   | 97 points  |
| 6. Quantification            | 93 points. |



"Emphasis on local studies" and "Conceptualization" topped the list of what the geography teachers regarded as the main features of modern geographic thought. Less than two percent of the teachers did not see anything new in geography.

The predominance of geography teachers with modern geographical ideas in our schools is not surprising. Teaching has always been the traditional career outlet for most geography graduates in Nigeria (Ologe, 1977).

Besides, the Nigerian Geographical Association (N.G.A) has made some efforts to disseminate the new ideas through its annual conferences, workshops, seminars and publications.

In a situation where the Nigerian Universities and Colleges of Education are disseminating new ideas in geography through publications, workshops, and production of modern geography graduates and/or professional geography teachers; in a situation where geography has become more useful, more home-based and conceptually structured, one would expect some corresponding changes and developments at the secondary level of geography education.

### 1.3 Statement of the Problem

Commenting on the dichotomy between the universities and the elementary and secondary schools with regard to geographical beliefs and practices, Broek (Broek, 1965: 19-20) has this to say:

"As is so often the case in the development of disciplines, geographic education in elementary and secondary schools continued for a time in the old tracks of environmentalism, unaware that the universities had abandoned them."<sup>6</sup>

Making a general comment on the West African School Certificate geography examination held in May/June 1981 the Chief examiner reported:

"The question paper was of comparable standard to those of past years. But candidates' performance was much lower than in the recent past. There was the disturbing revelation that most candidates did not understand the concept of relief and they equated it with climate and vegetation. In addition, maps were generally poorly drawn, and even where the candidates obviously had the facts, they lacked the ability to apply these

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<sup>6</sup>Broek, J.O. (1965) "Development of Geographic thought", GEOGRAPHY, Columbus, Ohio 1965, pp. 19-20.

theoretical facts to specific situations. Questions calling for the establishment of relationship were poorly handled and language was a general problem of most of the candidates".<sup>7</sup>

Just as Broek (1965) complained about the dichotomy between the secondary and university levels of American geography education, so also Ola (1978) highlighted the difference and gap between secondary and university geography in Nigeria. Ola (1978) lamented the deplorable condition of geography education at the secondary level when he said:

"And quite disappointingly students performance at the end rarely goes beyond mere description, implicitly stated and simplistic-explanations".<sup>8</sup>

These discrepancies need not occur in a situation where the universities have embarked on academic revolution in geography education for over a decade. As rightly pointed out by Ojo (1978: 21), whatever changes are effected at the university level of the

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<sup>7</sup>West African Examinations Council SC/GCE, May/June 1981 examination. Chief Examiners Report, p.121.

<sup>8</sup>Ola, D.K. (1978) The relationship between high school and university geography in Nigeria, IGU Commission on Geography in Education edited by Okunrotifa & Ola, Ibadan, 1978, p.54.

subject are bound to have a trickle-down effect on the high schools and colleges.

This study is therefore intended to find out the extent to which the new geographic ideas and practices affect geography education at the secondary level of our educational system.

This study was intended to examine the teachers' use of the new geographical knowledge in five major contexts:

1. Statement of lesson objectives
2. Approaches to geography lesson delivery
3. Evaluation of geography lessons
4. Pupils responses
5. Literature in use.

#### 1.4 Rationale for the Study

The high school geography is basic to university geography. It also determines the supply and calibre of students that are eventually available for admission into the universities to read geography. Therefore, it becomes necessary to examine the quality of secondary school geography education in the light of the new developments especially in the universities.

Besides, secondary education is likely to be terminal for most students who may not go beyond the secondary level of our system. One has to ensure that the quality of Geography Education offered such students is such that can enable them cope more with the problems and potentialities of life that have geographical dimensions.

The findings of the study might therefore form the basis for curricular innovations in geography especially in secondary schools. For example, formulation of geography educational objectives, selection of content, organisation, integration and presentation of geographical experiences; and evaluation of geographical knowledge, attitudes and skills as curricular activities would be more meaningful and probably more fruitful if based on a clear understanding of the geographic thought and practices prevalent in the universities.

Besides, it is necessary to find out the width of the gap, if any, that exists between the secondary school geography and geography in the universities. Knowledge of this would help in modifying the secondary school geography

curriculum in such a way that it becomes an effective springboard for geography education at higher levels of learning.

The need for the study can also be seen in the context of the light its findings would throw on other areas of geography education in Nigeria where research projects could be carried out.

Perhaps what one can regard as the most important argument in support of this study is the fact that it could shed some light on the interdependence and interrelationship of the secondary schools and the universities in our educational system in Nigeria.

#### 1.5 Scope and Limitations

As earlier stated, this study is intended to investigate the teachers' use of the new geographic knowledge in their geography lessons in the secondary school. The spring water of the new ideas in geography can only flow most effectively to the secondary school students through the teachers. Consequently all existing categories (in terms of qualifications) of geography teachers in Nigeria were involved in the study. For this

reason the study could be described as broadbased and fairly comprehensive.

However, the students' background experience variable was not investigated. One cannot rule out the possibility of this kind of variable having some influence, no matter, how minimal, on students' responses in the classroom setting.

Also the school's "teaching opportunities variable" in terms of availability and adequacy of audio-visual materials for geography teaching might have affected teachers' classroom performance. This variable was not considered very relevant to the central theme of this project and was therefore not investigated.

In interpreting the results of investigation therefore, one has to be very cautious.

#### 1.6 Definition of Terms

For the purpose of this study the following definitions based on a composite of ideas and conceptions developed by the researcher are operational.

Very Attractive Centres:

These are State capitals and university towns. Rural-urban migration is a predominant geographical phenomenon in Nigeria. The various relative job opportunities and social amenities offered by the state capitals are enough incentives to attract all categories of workers, teachers inclusive.

Secondly, where university towns are not state capitals, the researcher assumes that schools close to the universities are likely to be in an advantageous position to tap the resources of the universities.

Not Very Attractive Centres:

These are the settlements, towns or villages, which are neither state capitals nor university towns.

Trained Geography Teachers (TGT)

These are trained teachers who also studied geography as a teaching subject either at the university or at any post secondary institution. Grade one teachers; holders of the Nigerian Certificate in Education (NCE) and holders of Bachelor's degree in Education or Postgraduate diploma in Education Certificates fall within this category.

Untrained Geography Teachers (UGT)

These are professionally untrained graduate and non-graduate geography teachers



A holder of Master's degree in geography without any professional training in education also falls within this group.

Graduate Untrained Teachers (GUT)

These are teachers holding B.A. or B.Sc. (Geography) certificates without any teaching qualifications.

Graduate Trained Teachers (GTT)

These are teachers holding B.A. (Ed.) or B.Sc. (Ed.) (Geography) certificates. In other words these teachers had professional training in both geography and education either simultaneously or consecutively. The P.G.D.E. holders fall within this group.

Non-Graduate Untrained Teachers (NUT)

These are the non-degree holding teachers with no professional training in education. e.g. WASC, HSC, and Advanced Level Certificate holders.

Non-Graduate Trained Teachers (NTT)

These are the non-degree holding but trained teachers. The Grade One, Associateship Diploma and N.C.E. teachers fall within this group.

Systematic Geography Lesson (SGL)

A geography lesson which is predominated by emphasis on the locational characteristics

of named features. The lesson is based mainly on description of certain geographical feature of features.

#### Regional Geography Lesson (RGL)

A geography lesson that concentrates on the locational characteristics of one particular area. The lesson is mainly a description of a certain area, place or region.

#### Conceptual Geography Lesson (CGL)

A geography lesson in which emphasis is on ideas about location that can be applied generally. The lesson is predominated by geographical ideas or concepts.

#### Impact of Modern Geographic Thought on Geography Education

This means the effect of the new geographical ideas on the teaching and learning of geography.

Note: The so called Systematic geography lessons; regional geography lessons; and conceptual geography lessons are not mutually exclusive.

## CHAPTER II

### LITERATURE REVIEW, CONCEPTUAL FRAMEWORK AND HYPOTHESES

#### 2.1 Relevant Studies of Geography Education in Nigeria and in Certain Parts of the World

Literature reveals the fact that research efforts have been concentrated predominantly on problems facing geography teaching in the secondary school. The introduction of social studies into secondary schools in some states of the federation has been seen in terms of a significant curricular problem facing geography education at the high school level, (Okunrotifa, 1977). Other scholars have identified problems associated with different phases of the geography curriculum development process. These are: problems of "evaluation and external examination" (Daramola, 1977); problems of the discrepancy between geographic objectives and the nature of the geography curriculum (Akorede, 1977); and problems of approaches to geography teaching in Nigerian high schools (White, 1977).

Certain sociological problems such as rapid social change (Dally, 1977), pupil-parent relationship, pupil-teacher relationship, and pupil-school relationship (Oyebanji, 1977) have also been identified.

Scholars have also gone into administrative mechanism to look for factors that might have direct or indirect impact on geographic education. Problems of staffing, training, supervision, finance and equipment have also been highlighted (Ola, D.K., 1977; Okpalanma, 1977; Ajimoko, 1977).

Apart from these assertions some of which are not based on research findings, notable empirical studies have been carried out in respect of geography evaluation; students' attitude to geography; teaching strategies; quality of geography textbooks; geography lesson types; geographic objectives; job aspirations of geography students; and factors influencing students enrolment in geography.

Okunrotifa (1973) carried out a survey of sixth form geography teaching practices in the

North Central State of Nigeria. The purpose of the study was to identify problems confronting geography teaching at the school certificate level with a view to offering suggestions for the solution of such problems. In the survey, he made use of observation, personal interview and questionnaire. Five schools were involved in the study and only ten geography lessons were observed. He discovered that fifty per cent of the geography teachers involved in the study were foreigners. Seventy per cent of the geography lessons were discovered to be content based and without any specific lesson objectives. Okunrotifa also discovered that the skills and concepts to be taught in more than seventy per cent of the lessons were not indicated. He found out that more than fifty percent of the lessons observed were uninspiring, dull, dry and predominated by lecture methods. He lamented the situation in these words:

"Students were apparently fed on an unstructured diet of descriptive information accompanied by elementary and often deterministic explanations." (Okunrotifa, 1973).

The study revealed other problems such as: lack of adequate student's participation in geography lessons; poorly formulated lesson objectives; use of textbooks written by foreigners and with foreign background; and apparent lack of fieldwork in geography education **in spite of the** fact that all teachers interviewed agreed and claimed that fieldwork is enlivening to the mind, and productive of intellectual initiative and enthusiasm.

Okunrotifa's study was more concerned with the general characteristics of geography lessons in the study area without any clearly defined intention to measure innovations that have gone into geography education over the years. The research effort can therefore be said to have been based mainly on "what is" rather than on "what should be". Besides, one is inclined to think that a study of ten geography lessons in five schools is not likely to give a true picture of what the situation really is talk less of what **it** should be. However, the findings of the study

**have** given this researcher an impetus to carry out a study such as the current one.

Bakare (1969) also carried out a study on the levels of cognitive functioning tested by past school certificate geography examinations in Nigeria. The purpose of the study was to determine the adequacy of these examinations as a means of achieving the accepted objectives of geography teaching in the secondary schools. He contended that the adequacy of an examination was more accurately determined against a background of the accepted objectives of the corresponding course of instruction.

Through an opinion poll survey, Bakare (1969) identified and listed ten objectives of geography education which he used for his study. These are:

1. Knowledge of geographical facts
2. Critical thinking.
3. Map interpretation.
4. Observation.
5. International understanding.
6. Geographical imagination.

7. Responsible citizenship.
8. Application of essential unit of knowledge.
9. Conservation of natural resources.
10. Worthwhile use of leisure.

Fifteen students were involved in the first part of the study designed to determine the frequency of mention of each of the ten listed objectives. International understanding; critical thinking and knowledge of geographical facts were rated very high by the students. Bakare also studied the "observed" and "expected" rankings of the ten geographical objectives by university lecturers, secondary school geography teachers and geography student teachers using a five-point Likert-type scale. The percentage frequency of mention of the geographical objectives by the students in respect of the cognitive, affective and psycho-motor domains was found to be distributed as follows:

|     |                     |       |
|-----|---------------------|-------|
| 1st | Affective Domain    | 56.9% |
| 2nd | Cognitive Domain    | 32.3% |
| 3rd | Psycho-motor Domain | 10.8% |

The ranking of the objectives by the fifteen students contrasted sharply with the rankings by



the second population consisting of university lecturers, secondary school geography teachers and geography student-teachers as shown by the following table:

Table 2.1:      RATING OF GEOGRAPHICAL  
                         OBJECTIVES

| <u>O b s e r v e d</u>         |                     | <u>E x p e c t e d</u>         |                     |
|--------------------------------|---------------------|--------------------------------|---------------------|
| <u>Ranks</u>                   | <u>Mean Ratings</u> | <u>Ranks</u>                   | <u>Mean Ratings</u> |
| 1. Fact Knowledge              | = (4.36)            | 1. Critical thinking           | = (4.42)            |
| 2. Mapwork                     | = (3.20)            | 2. Observation                 | = (4.28)            |
| 3. Imagination                 | = (2.82)            | 3. International understanding | = (3.81)            |
| 4. Critical Thinking           | = (2.65)            | 4. Mapwork                     | = (3.84)            |
| 5. Conservation                | = (2.56)            | 5. Knowledge                   | = (3.75)            |
| 6. International understanding | = (2.55)            | 6. Conservation                | = (3.62)            |
| 7. Observation                 | = (2.46)            | 7. Citizenship                 | = (3.47)            |
| 8. Citizenship                 | = (2.33)            | 8. Imagination                 | = (3.41)            |
| 9. Unity of all knowledge      | = (2.09)            | 9. Unity of all knowledge      | = (3.29)            |
| 10. Leisure                    | = (2.04)            | 10. Leisure                    | = (3.20)            |

Source = Bakare, C.G.M., Levels of Cognitive Functioning Tested by Past School Certificate Geography Examinations in New Dimensions in Nigerian High School Geography. (Ed.) Majasan, J.A., Ibadan 1969, pg. 201.

The sharp contrast between the ratings of the two populations should be expected in view of the fact that the students were less knowledgeable than the geography teachers.

However, Bakare, using the mean ratings of objectives in each domain, discovered that all groups of assessors: University lecturers in geography, geography teachers, and geography student teachers agreed that the order of importance both in practice and in an ideal situation should be:

- 1st Cognitive objectives.
- 2nd Psychomotor objectives.
- 3rd Affective objectives.

Thus the primacy of cognitive objectives of geographic education was established. Even so, the percentage frequency distribution of different types of cognitive behaviours tested by WAEC School Certificate Examinations for a period of ten years (1956-1965) showed a preponderance of cognitive evaluation questions. For example in geography paper one during the period, about 6.7% of the school certificate geography questions were of

higher order cognitive domain (Analysis, Synthesis and Evaluation) while about 93.3% of the questions were of lower order cognitive domain (Knowledge, Comprehension and Application). All the questions on paper two for the period were also of the lower order cognitive quality (Bakare, 1969).

A lot was revealed by Bakare's work with respect to evaluation in geography. Since his study was carried out more than a decade ago, however, it is likely one would think that the situation would have changed. Besides, Bakare based his study on a system of evaluation that was external to the school. Perhaps a study of geography lesson evaluation in classroom setting might throw some light on where the problem really lies, whether with the geography teachers or with the external examiners.

What one might call a "post mortem impact study" was carried out by Ola, D.K. (1979). It was an empirical study designed to evaluate the previous secondary school geographical experience of about one month old prelim students of Universities of Ibadan, Ife and Ilorin. The study focussed mainly on

- (a) students participation in geographical activities in their former secondary schools;
- (b) performance in school certificate examinations that could be ascribed to certain given factors;
- (c) relationship between secondary school geography education and university geography education as perceived by the students;
- (d) students experience with regard to different aspects of secondary school geography.

Questionnaires were administered to the students. There were 137 student-respondents from about thirteen states of the Federation.

Ola discovered that long excursions attracted the highest students participation with 63.5% while projects attracted the lowest student participation with 10.9%. Students ascribed their performance in school certificate geography examination to the following factors arranged in descending order of importance:

- |                                   |         |
|-----------------------------------|---------|
| (1) Personal interest             | (81.8%) |
| (2) Personal ability              | (56.7%) |
| (3) Preparation without much help | (56.2%) |

- |                    |          |
|--------------------|----------|
| (4) Sound teaching | (44.5%)  |
| (5) Facilities     | (16.8%). |

In terms of relationship between secondary school geography and university geography, students in the University of Ibadan said there was no relationship **at all**. However, majority of the students believed that there was an average or slight relationship between the two levels of education in terms of geographic education.

With regard to experience 53.7% of the students confessed that they liked physical geography most while in the secondary school. 28.7% liked regional geography while 17.6% liked practical geography. About 40.9% claimed that practical geography was the most difficult.

It is difficult to estimate the effect of the one-month university academic life on the retrospective responses of the students used for this study. However, a true picture of what is, in the light of what should be, in terms of curricular innovations in geography education at the tertiary level might be better seen in real secondary school environment.

Another notable empirical study was the one carried out by Okpala, (1980). It was based on the statement of instructional objectives in high school geography. The purpose of the study was to ascertain the appropriateness of behavioural and content elements of instructional objectives in geography. Also, she intended to ascertain who among the geography educators and other types of geography teachers state better instructional objectives.

She used an open ended questionnaire for the study. The respondents were required to choose topics and formulate instructional objectives based on the topics. Seventy four randomly selected geography teachers from Imo, Anambra, and Bendel States of Nigeria were used for the study. The geography teachers were categorized by the researcher into: "Geography educators," "Academic geographers," "Non-geography academics", and "Auxilliary geography teachers." Okpala identified three elements of instructional objectives: stimulus, terminal performance, and action verb. She used the three elements to evaluate and classify the objectives stated by the respondents.

Using proportion differences analysis, she discovered:

- (a) that geography teachers differed in the quality of their stated instructional objectives;
- (b) that geography educators and other types of geography teachers differed in adequacy of instructional objectives stated;
- (c) that the geography instructional objectives stated by geography educators were better than those stated by other geography teachers.

Okpala then argued that bad or inadequate instructional objectives could lead to bad planning of lessons and lack of adequate participation on the part of the students.

An earlier study by Okunrotifa (1973) revealed the fact that about seventy **per cent** of the geography lessons studied had no lesson objectives. While it would not be proper to assume that such situation would obtain in all parts of the country, it would be unrealistic to think that every geography teacher would formulate instructional objectives for his/her lesson topics.

It is in the light of this that one sees a measure of artificiality in the responses given to Okpala's open-ended questionnaire used for her study. Perhaps more natural responses would have been obtained if Okpala had used instructional objectives as stated in actual lesson plans.

Also the researcher appeared to have used "Mager-style-objectives (Mager, 1962). In the "Mager Structure", an objective has three elements: Behaviour, condition and standards. Okpala's structure does not seem to have coincided neatly with that of Mager. Formulating instructional objective on "Agricultural products of Nigeria" Okpala gave the following "model" objective:

"Given a blank map of Nigeria, the students should be able to insert the agricultural products in the production area".

Okpala's structural analysis of the "model" objective:

Stimulus = "A blank map of Nigeria"

Terminal Performance = "Agricultural products"

Action Verb = "Insert". (Okpala, 1980: 127).

Magers-style-objectives are very popular and a Mager's structural analysis of the objective would have been as follows:



Behaviour = insert the agricultural products  
Condition = given a blank map of Nigeria  
Standard = insert the agricultural products  
in the production areas.

Tyler (1949) had earlier identified two major elements of instructional objectives: Behaviour and Content. Gagne-Style-Objectives (Gagne, 1974) have four components:

- (a) conditions
- (b) behaviours
- (c) object to be acted upon
- (d) characteristics of performance that indicate correctness.

A critical view of all shades of opinion about the structure of educational lesson objectives highlights four major issues: The issues of the action the student is expected to perform; in respect of what, under what conditions and at what level of performance. Consequently four components of an educational lesson objective can be accentuated:

- (a) Behaviour
- (b) Content
- (c) Condition
- (d) Acceptable Level of Performance - (ALP).

The quality and/or adequacy of instructional objectives could be better assessed in the light of these four elements.

In his study titled "The troubled status of geography in the high schools of Northern Kentucky, Weiss, (1981) discovered that, there was a pre-dominance of regional approach to geography teaching in Northern Kentucky secondary schools where the teachers tried to make a sort of country-by-country survey of the world. He also discovered that little or no use was made of current events to illustrate geographical phenomena. There was also a deliberate attempt to pick on topics that appealed to individual teachers.

In the study, Weiss used mainly informal interviews and twenty five secondary schools were surveyed.

Weiss concluded that teachers and administrators felt that geography was for the average student. He also argued that the new ideas that have profoundly changed academic geography since the 1950's in the United States of America had little impact on the material taught in geography courses or on

teachers and administrators' opinions about what, **in fact**, geography is. Apparent lack of actual classroom lesson observation and the inclusion of non-geography teachers, especially public administrators, in the study make the findings of the study somewhat suspect. They can only be acceptable with some caution.

The literature in use for geographic education in the secondary school has also been researched into. In their study titled "An assessment of recent college textbooks in introductory human and regional geography". Wheeler and Slack (1981) tried to evaluate a number of recently published college textbooks in introductory and regional geography in the light of their presentation of traditional approaches and contemporary research themes; and also to assess their level of reading difficulty. Editors of twenty four introductory college textbooks in human and regional geography published since 1970 were selected for evaluation using a panel of experienced geographers. The following five contemporary research themes were discovered to be poorly covered by the textbooks.

- (a) Applied geography (with mean value of 2.42)
- (b) Behavioural themes (with a mean value of 2.66)
- (c) Policy approaches (with a mean value of 2.46)
- (d) Problem solving approach (with a mean value of 2.64)
- (e) Societal effects (with a mean value of 3.55)

The overall mean ranking was found to be 2.75.

Using the "Smog Test" analysis Wheeler and Slack, (1981) discovered that some textbooks were found to be of high level of reading difficulty, especially books based on facts of research publications. Wheeler and Slack contended that the information included in the textbooks inevitably lagged behind the knowledge gained at the frontiers of research as published primarily in periodicals. The "SMOG Test" used in this study involved four processes:

- (1) Selecting ten consecutive sentences at the beginning, ten in the middle and ten near the end of each text.
- (2) Counting the number of words containing three or more syllables.
- (3) Estimating the square root of polysyllabic words to the nearest perfect square.

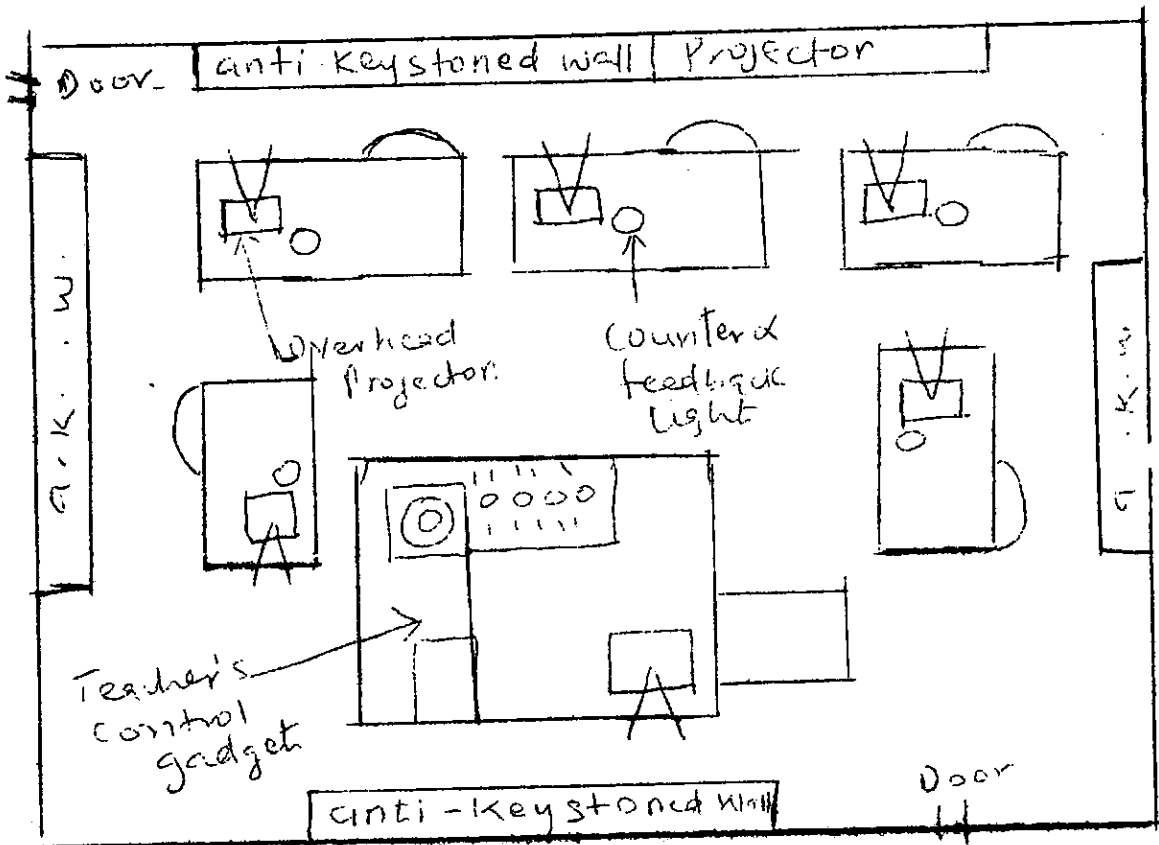
- (4) Adding three to the approximate square root to obtain the reading level or grade that a person must have reached to understand the text fully.

"Fry's readability procedure" was also used in the study and it involved.

- (a) **choosing** three sample passages from the beginning, middle and end of the book, each 100 words in length and beginning at the start of a sentence,
- (b) determining the number of sentences (to the nearest one-tenth) and the total number of syllables,
- (c) averaging the findings from the three passages and locating on Fry's published readability graph the approximate grade level.

Viewed critically, the two procedures appear fairly subjective and arbitrary. The language, emphasis, illustrations (whether diagramatic and/or cartographic) and the logic of material presentation did not appear to be adequately and effectively examined. It might therefore be necessary to consider the characteristics of geography textbooks in terms of author's base and the content background.

RESPONSE SYSTEM (VRS) CLASSROOM PLAN



Note:- Adapted from Cooke, Heron and Heward, (1980:254)

The impact of advanced technology on geography education in the secondary school was also evaluated by a team of researchers in a project titled "Teaching geography in the visual response system - (VRS) (Cooke, Heron, Heward, 1980; 253-258). It was an experimental study designed to increase the level of active response to instructional material. The instruments used included a Visual Response System (VRS) classroom with highly mechanized learning-teaching environment **equipped** with overhead projectors, individual desks; transparent answer sheets, maps, screens all arranged in horse shoe formation.

Cooke et. al. discovered that there was an increase in students' responses and participation in the geography learning process. Besides, they discovered a diversification of students' responses. However the researchers agreed that not all geographical topics or concepts could be taken care of by the VRS. In Nigeria, such highly sophisticated equipment, coupled with technical-know-how **are still** lacking.

Another very relevant study was the one carried out by the Department of Education and Science (DES) in Britain in 1974. The purpose of the study was to find out the extent to which new developments in geographic thinking were affecting geography lessons at the high school level. A survey design called "Survey No. 19" was adopted. Geography lessons were observed and classified. It was discovered that eighteen percent of the geography lessons observed were conceptually based contrary to what obtained about a few years earlier when there was no single conceptually based geography lesson in the secondary schools within the study area. Twenty three percent of the lessons observed were systematically based while 46% of the lessons were regionally based.

This researcher is therefore interested in what impact the world wide new thinking has on secondary school geography education in Nigeria. Apart from the research-based assertions so far enumerated and discussed, certain non-research based assertions have been made by eminent scholars.

Abegunde (1977) is of the view that the following factors exert a lot of influence on



geography education especially at the secondary level of our system:

1. Social background of pupil and teacher
2. Innovative changes in concepts and methodologies of geography.
3. Consequences of socio-economic transformation in Nigeria.

He went further to describe defective orientation acquired by students when learning the basic principles and concepts of geography as the major source of the problem facing geographic education in Nigerian secondary schools.

Vincent Tidswell (1981) indicated three discontinuities within the teaching of geography:

1. Between Primary and Secondary Schools.
2. Between O/L and A/L.
3. Between Secondary School and University.

He emphasized the importance of the influence that the university should exert on the secondary school curriculum.

Chris Joseph (1981) writing on geography examinations in the 1970s commended the move away from "Recall questions of the previous years to

interpretation of maps, diagrams and tables". He praised the emphasis now placed on continuous assessment which involves the class teacher. There is no doubt that Joseph's impression are based on the prevailing situations in Britain which may differ from what obtains in Nigeria.

Another thought provoking assertion is the one made by R.C. Miller (1948) and quoted by Hubbard and Stoddard (1979: 188-195). Miller is reputed to have said the following:

"Factors that perpetuate misconceptions of geography may include differential quality of both teacher training and textbooks. Teachers who have received most of their geographical training in colleges of education and have taken few, if any, college courses from professional geographers are more likely to present a traditional image of geography rather than a contemporary one, to their students" (Miller, 1948).

Miller contended that about 80% of geography teachers were inadequately trained. Jackson, (1976) writing on "the Persistence of Outmoded Ideas in High School Geography texts" argued that the frequent use of textbooks written by non-geographers tend to project a distorted view concerning the nature of the discipline (Jackson, 1976: 399-408).

Commenting on the need to introduce statistical methods into secondary school geography, Okobiah, (1980) said that:

"The new paradigm in geographical inquiries is research and problem-solving oriented; there is the explainable neglect of quantitative and statistical methods of analysis in the secondary school geographical teaching and learning, (Okobia, 1980: 138-144).

Mabogunje (1969) also talked about "the pedagogic gap in geographic education" by which he meant an apparent lack of quantitative and statistical methods of geography teaching resulting in ineffective geography teaching. Faniran, (1969) also talked about geography curricular irregularity exemplified by diversification of geography syllabuses and schemes of work by different geography teachers in the secondary schools.

From the research-based and non-research-based opinions so far highlighted, it can be seen that a lot of research efforts have been concentrated on problems facing geography teaching or on strategies for geography teaching. It appears that not much has been done in the area of looking at geographic education in the light of new ideas in geography

at least in Nigeria. This investigator is therefore interested in that part of geography educational studies that has attracted little or no attention.

## 2.2 Literature on the Nature of Geographic Knowledge

The question of what constitutes geographic knowledge has attracted the attention of many scholars all over the world.

Graves and Moore (1972) asserted that geography is made up of three forms of knowledge: Pure Science, History and Social Science which, according to them, correspond to the ways geographers seek knowledge in space. Geomorphology and climatology are regarded as belonging to the physical sciences which should be taught in schools through experimentation and development of theoretical knowledge. Geographical issues having to do with why and how certain earth's phenomena are spatially located and/or distributed are regarded as essentially historical or ideographical and should be taught by the historical approach. Geographical activities involving analysis of settlement patterns and communications are regarded as human and should be taught adopting the methods of the social sciences (Graves and Moore, 1972).

Further, they support the views earlier expressed by Hirst (Hirst, 1965) that geography is a field of knowledge. Graves and Moore predicted that geography as a field of knowledge might ultimately explode into three distinct forms of knowledge. Earlier, Paul Hirst had expressed the view that geographical concepts were not indigenous to geography but borrowed from several forms of primary knowledge (Hirst, 1965).

Broek holds the view that the central concept in geography is "place", (Broek, 1965: 5-7). According to him, there are two kinds of places: "place-individual or given place" like Lagos, Michigan, River Niger and the like; and "place-abstract" or conceptual place like plateau, desert, metropolitan area or region. The place-abstract is a mental concept formulated to arrange earth's phenomena or features in some abstract order. The term "region" is restricted to this type of place.

As early as the dawn of the nineteenth century, Immanuel Kant had identified three ways of organising knowledge. According to Kant, knowledge

can be organised into groups according to the kind of objects studied. For example, botany studies plants; geology studies earth's crust; and sociology studies social groups. These are "Systematic Sciences". Kant argued that this approach did not exhaust the study of reality (Kant 1724-2804). According to Kant, another way of organising knowledge is to look at facts in their relationship through time which he labelled "historical sciences". The domain of "geographical sciences" could be found in the study of things as they are associated in space. This epistemological dimension of geography was accentuated by Alfred Hettner in his treatise on the "nature of geography" (Hettner, 1939). Afolabi Ojo (1970) sees geographical knowledge from sociological or anthropocentric point of view which places emphasis on the significance of "man in the society" as the central theme of the geographic knowledge. Both Majasan and Okunrotifa appear to take an epistemological position based on pragmatic philosophy. To them geography should predominantly be concerned with the spatial attributes of the immediate environment. In other words, geographic knowledge

should be based on the spatial problems and potentialities of the locality with a view to solving such problems and controlling, conserving and utilizing such potentialities for the benefit of the society (Majasan, 1969, Okunrotifa, 1977).

Literature on the nature of geographical knowledge is pregnant with numerous ideas and view points that are virtually inexhaustible.

In the light of modern development in geographical thinking, the theory of "three forms of knowledge" propounded by Graves and Moore is quite untenable. The differentiation of geography into physical, historical and human fields of knowledge does not fall in line with the conceptual revolution now taking place in geography. Besides, it is interesting to note that Graves and Moore contradicted the idea of such dichotomy in the latter part of their work when they narrated a gradual development of geographic knowledge from facts cataloguing through deterministic description of man-environment relations to the Science of Spatial correlations (Graves and Moore, 1972: 18).

A critical look at Graves and Moore's classification vis-a-vis that of Kant shows clearly that while Graves and Moore seem to base their arguments on how geographic knowledge is evolved, Kant on the other hand based his argument on what is contained in geographic knowledge. However, Kant's concept of "association of things in space" as the bedrock of geographical knowledge sets a sort of uncomfortable limit to the scope of geography. Kant wrote his papers towards the tail end of the eighteenth century. Kant's contention could be attributed to the narrow scope of geography at that time.

Contributions by non-geographers to arguments on the theory of knowledge have also thrown some light on the nature of geographic knowledge.

Paul Hirst (1965) rightly defined knowledge as the way our experience of reality is structured by our minds. In other words, knowledge is a construction from within. (Almy, 1965, Ginsburg and Oppen, 1969, Chitterden, 1969). Each of the fundamental ways of structuring experience is called a form of knowledge. Thus logical relationships



between symbols are expressed in the language we call mathematics and logic. Our experience of the physical movement of bodies are expressed in terms of the symbolic language as physics.

Similarly our experiences of spatial processes of spatially distributed phenomena should be expressed in the language called geography as a form of knowledge. This form of knowledge is unique because it has the peculiarity of being based predominantly on the composite attributes of space. Unlike other forms of knowledge which deal essentially with certain components of space, geography as a form of knowledge deals with the totality of the diverse attributes of space. Consequently, to talk of geography being only a field of knowledge (Paul Hirst, 1965) is unrealistic. Hirst's notion of rational belief or rational mind is quite tenable but his classification of forms of knowledge appears very subjective.

Watt's classification of rational belief is, perhaps, more relevant to this thesis. According to him there are only two systems of rational belief:

- (a) There is the purely conceptual system which is governed by norms of logical consistency, and
- (b) There is the factual system which is governed by the norms of logical consistency and by the observable facts of the matter, (Watt, 1974: 1-11).

Geography seems to have adopted the second system. Unfortunately, some authors always concentrate more on the observable facts of geographical knowledge at the expense of the conceptual system governed by norms of logical consistency.

### 2.3 Literature on the Nature of Modern Geographic Thought as a Curriculum Innovation

What is it that is new in geography is a question to which many answers have been given by scholars within and outside Nigeria.

Within the last two decades geography has been undergoing a sort of metamorphism with regard to its objectives, content and methodology. Even though scholars differ slightly on what they perceive as the most important symptom of the change, they seem to agree that the new thought is primarily

based on a conceptual framework. Davies (1972) tagged the new trend "a conceptual revolution". Harvey (1969) and Fitzgerald (1974) described the development as "a move from cognitive description and cause-effect-analysis through temporal modes of explanation to functional and ecological analysis and more recently to systems analysis." To Harvey and Fitzgerald morphometric analysis is a method of explanation which is becoming more important because according to them, the relating of patterns of distributions on the earth's surface to geometry does allow for a degree of prediction which is an attribute of science. Akinola (1975) opined that geography had passed through four major traditions: chorographic tradition, man-land relation tradition; environmental tradition, and finally the quantitative-scientific tradition. To Akinola and Allan Blyth (1976) what constitutes modern geography is quantification. Majasan holds the view that Nigerian geography had passed through three stages of development:

- (a) the capes and bays geography based on maps and travellers' information with emphasis on

the 17th century geography of Nathaniel  
Carpenter and Barnard Varenius., (Majasan  
1969). According to him, geography education  
at this stage was characterised by uncontrolled  
observations of men of varied capabilities  
in far off regions of the world.

(b) The Western European geography: which was  
based on Ritters' determinist approach to the  
study of Europe and Australia. It was a  
period of foreign regional geography.

(c) The local geography.

From the view-point of Majasan, the new trend is  
characterized by emphasis on local studies "arising  
from a growing realization that Nigeria needs to know  
more facts about her untapped resources, her poten-  
tialities and problems in development" (Majasan, 1969).  
Ojo (1970) argues that what is new in geography is  
emphasis on man in society. He described sociali-  
zation process "as a catalyst of geography. He  
supports his claim by quoting the following from  
the Chicago Tribune (Sept. 29, 1968):

"The new geographers are unearthing man.  
In place of facts about distant people and  
places, they are discovering the guy who  
lives in traffic jams, polluted air and  
changing neighbourhoods."

Okunrotifa contends that modern geography is problem-solving or problem-oriented. Okunrotifa's view seems to be the crux of the matter. It represents the meeting point of all modern geographical ideas at least in the Nigerian context. Whether the new trend is marked by quantification; by morphometric analysis, by localization, by socialization or by conceptualization the ultimate intention is to direct geography toward finding solutions to the numerous spatial problems of man.

The problem-solving or problem-oriented modern geography has one important tool without which it cannot function. This tool is "conceptualization" which Davies (1972) had identified as the characteristic feature of the new geography. As rightly noted by Davies, the increased attention paid to conceptualization represents the realization that this is the means whereby knowledge is more easily codified, and deeper insights into the possible spatial variations are thereby provided. He goes further to warn that if there is no body of concepts to act as a checklist of current problems, the geographic viewpoint can easily degenerate into an encyclopaedic list of facts and regularities.

Davies idea of conceptual revolution in geography has probably been based on his idea of perception of order in the universe. He said "Science ultimately depends upon man's perception of order in the universe, the individual disciplines being distinguished not by the particular objects they study but by the questions they ask and by the integrating concepts, propositions and perspectives that their workers use" (Davies, 1972: 9). A subject like geography cannot afford to concentrate too much on the particulars - (that is, isolated geographical facts). Each of man's spatial problems cannot be tied to the apron of a particular earth phenomenon. Pollution, for example, may be caused by a combination of several factors. The "particulars" form the information content of our subject in its modern setting. As rightly indicated by Clarke (1970; 87) "information content is the most transient feature of our subject. A conceptual framework is more permanent than the fabric of content which surrounds it". Conceptualization which may be defined as a process of creating a mental picture or a mental map of a geographical situation is of paramount importance

to any empirical studies carried out by a geographer. Spatial problems like congestion, pollution, traffic jam, soil erosion, and the like have to be conceptualized before they can be studied scientifically. Besides, "the universality of change and the increasing artificial nature of environments", as rightly pointed out by Cox (1972) "have thrust emphasis on processes in geographical studies.

The environment with which man constantly interacts is increasingly becoming artificial. The artificiality of the environment is a product of human ideas. "The sprawling giantism of megalopolis" (Ojo, 1970), the road networks, atmospheric seeding, air conditioning, reclamation and all forms of ecological transformation brought about by man are the pre-dominant features of that artificiality. All these point to the need for a concept-based geography syllabus to replace the present conglomeration of systematic, regional and concentric syllabi that make geography look like an unbounded discipline. The High School Geography Committee, an arm of the Nigerian Geographical Association realized the need for this

type of syllabus when it suggested the following as concepts to be taught in the secondary schools:

1. Location
2. Distributions and patterns
3. Relationship and interactions
4. Energy
5. Transformation: change through time
6. Regions.

(HSGC, quoted by Okunrotifa, 1978)

A close study of the suggested conceptual syllabus reveals three things having three attributes: ideas, events and matters each having the attributes of location, distribution and process. Process here means a change through time that an idea, an event, or a matter undergoes including the mechanism of the change. A really concept-based syllabus should therefore lay emphasis on three main concepts:

1. Spatial Location
2. Spatial Distribution
3. Spatial Processes.

The spatial location, distribution and processes of matters should form the "information content" of the syllabus (Clark 1970: 87) while the real conceptual



framework would be composed of the spatial location, distribution and processes of ideas and events. Thus a geographer would become interested in the location of "rumour" (for example) and its dissemination through spatial lines of communication. He would be interested in the location, the distribution and the effect of pollution within a geographical area. The information provided by facts of location, distribution and processes of matters - vegetation, climate, and various forms of topographical features would be used in conceptualizing spatial problems and spatial opportunities. This depicts the nature of the current geography curriculum development going on especially in the universities. Such new developments call for a curriculum change at the secondary level of our educational system.

#### 2.4 Curriculum Content and the Dynamics of Curriculum Change

##### 2.4.1 The Concept of Curriculum and its Significance in the Educational Process

Attempts have been made by many authors or curriculum experts to define the concept "Curriculum". Adopting a derivative or etymological approach, Bobitt (1969: 155) traced the Latin root of the

word curriculum and defined it as "a runway" or "a course which one runs to reach a goal". Using the same approach Onwuka (1981) referred to curriculum as "a race track".

From the etymological definitions one is presented with the notion of an activity that has "cause", "course" and "consequence". This notion would be expatiated upon later in this chapter.

Brown (1969) defined curriculum as "the total situation through which the school makes behavioural changes in those who pass through it. Bamgboye (1971) defined curriculum as "A planned sequence of learning experiences designed to create a set of specific behavioural changes for students within a given learning environment" (Bamgboye, 1971: 9). Gwynn (1943) quoted by Onwuka (1981) defined curriculum as "all experiences which children have under the administration of the school" (Gwynn, 1943, Caswell and Campbell, 1935, Giles and Others, 1942, Wheeler, 1967). To others like Becher and Maclure, (1978); Robert Bell, (1971), curriculum relates to all "Educational encounters." It is the entire set of chosen activities by which the school seeks to

achieve its educating purpose. It is what happens in school as a result of what teachers do. It is all the experiences of children for which the school accepts responsibility. It is, in the words of Bell, (Bell, 1971) "the offering of socially valued knowledge, skills and attitudes made available to students through a variety of arrangements during the time they are at school, college or university."

A careful examination of the few definitions of the curriculum enumerated above reveals the fact that "curriculum" is an instrument par excellence in the educational process. This fact is well accentuated in the National Policy on Education by the official proclamation that "The Federal Government of Nigeria has adopted education as an instrument par excellence for effecting national development and that education is a dynamic instrument of change" (Fed. Govt. of Nigeria, 1981: 5-6).

The point is that in the education process itself the curriculum is the main instrument or at least the raw material. The process of education can be likened to a manufacturing process. The two

principal raw materials in the process are the child and the curriculum. The educational process simply involves a careful gradual mixing up of the two principal raw materials - the child and the curriculum, with a view to producing a changed or educated person.

Why should we use a particular type of curricular raw material in the process? What are the modes and dimensions of processing? and what are the anticipated consequences or outcomes? These are the issues earlier referred to as "cause", "course" and "consequence".

#### 2.4.2 The Role of the Disciplines in Determining the Content of the School Curriculum

It has been opined by some eminent scholars that education is primarily concerned with the improvement of the mind and central to the improvement of the mind is the growth of knowledge (Pring, 1976; Hirst, 1965; Watt, 1974; Peterson, 1971). Also the growth of knowledge as it has been pointed out, involves refinement and extension of the conceptual framework through which experience is organised (Pring, 1976: 23). Such refinement and extension

of the conceptual framework according to Pring (op. cit.) is done through the disciplines. Onwuka (1981) contends that curriculum is knowledge that comes from the disciplines. He further elaborates on this when he says 'knowledge is the product of a process of disciplined inquiry.' However, Onwuka is only highlighting the arguments of the perennialists, the essentialists and the disciplines - doctrine-advocates with regard to their conceptions of the curriculum.

The perennialists contend that the curriculum consists of permanent studies and its main concern is the cultivation of the mind. The essentialists believe that the curriculum is concerned with the selecting, acquisition and storage of knowledge for future use. The Disciplines Doctrine Advocates regard curriculum as knowledge derived from the disciplines. The perennialists, essentialists and the disciplines-doctrine-advocates have been described as traditionalists whose conceptions of the curriculum are too narrow to be embraced unquestioned. Onwuka (Onwuka, 1981: 8) opined that the stands of the three schools of thought divorced school studies from the realities and demands of life in society.

One pertinent question therefore arises. What or who are the major determinants of the curriculum

content? It seems there is a sort of consensus of opinion about the contributions to curriculum content made by the disciplines, the child and the society.

What appears controversial is perhaps the predominance of the roles played by each of the three determinants. Thus some people often ask the question: should curriculum be child-centred or society centred or subject-centred? This question has generated a lot of debate on what should be and what are the alternative approaches to the curriculum.

Stanley Nisbet in his "contingent value theory" (Nisbet, 1957) contends that curricular materials should be selected and associated with specific societal or individual needs or aspirations in a sort of contingency table. Personal growth and adjustment to the environment form the basis of his principle. He contends that the curriculum based on the contingent value principle should be geared towards satisfying personal and social needs and self development through certain relevant activities that have practical values. This principle has been rightly described as being too arbitrary even though practical (Barrow, 1976).

Another principle, that is "intrinsic value theory" (Bantock 1963, Peters 1972) is based on the argument that some subjects or activities are intrinsically valuable; and worthwhile by themselves. Consequently, children should be initiated into such

activities or subjects. The main criticism of this principle is the fact that to conclude that a particular activity is intrinsically valuable is to appeal to one's personal sentiment or subjectivity. Hence worthwhileness of an activity is based on absolute subjectivity in the theory. Worthwhileness is based on what is true to life. But what is true to life may not necessarily be of practical immediate use to man.

Wilson (1975) subscribes to a child-centred curriculum. He contends that a worthwhile curriculum is that based on the needs, interest and/or wants of the individual child.

But the questions one might want to ask are: what do children actually need? How are we to determine such need or needs? Wilson did not expatiate much on this. Besides, the suggestion that the curriculum should be based on children's needs is not according to Barrow (op.cit) in itself of any practical help. For example, if I want to do something, must I necessarily be interested in doing it, must I necessarily want to do it? Common sense revolts at the idea that the fact that a person is

interested in doing something makes that activity, whatever it is, worthwhile.

White's category distinctions theory (White, 1973) stipulates that what is intrinsically worthwhile is identifiable with what a person would on reflection want for its own sake.

Therefore, according to him, the task of education is to enable individuals to make a meaningful choice between various activities and ways of life.

White goes further to opine that it is not for school masters to insist on the validity of their belief that mathematics is more worthwhile than photography. Rather, it is for each individual to decide what he would on reflection want for its own sake. **In other** words, individuals should be able to make meaningful choices between activities and life styles.

Two categories of activities are recommended by White

#### Category 1

"All those activities of which no understanding of what it is to want the activity in question is logically possible without engaging in the activity in question".



## Category 2

"All those activities of which some understanding of what it is to want the activity in question is logically possible without engaging in it".

For category one activities, White suggested pure science, pure mathematics, philosophising and appreciating works of arts. For category two activities he suggested speaking foreign languages, playing cricket or other organised games; cookery; painting pictures and being an accountant.

One cannot understand what some activities involve without engaging in them. It is, however, true that understanding what something is or what it involves is a necessary condition of understanding what it is to want to engage in it but it is not always a sufficient condition. For example, activities that involve human behavioural interactions in a social setting are not likely to offer themselves to a clear understanding of what it is to want to engage in them because of the unpredictable nature of human behaviour. Thus, as rightly pointed out by Barrow (op.cit) one never really knows what one is

missing till one tries. Also, Barrow contends, "if an individual is not in a position to make a realistic assessment of whether he would enjoy engaging in category two activities (as stated above), then surely he is not in any real sense able to judge what he would on reflection want for its own sake". Also what a man wants when drunk or unaware of alternatives does not count as what he would on reflection want. Like Bantocks and Peters intrinsic value theory, (Bantock, 1973, Peters, 1972), White's category distinctions theory is based on subjective principles. The fact that White himself believes that no activity can be shown to be intrinsically valuable for every one deflates his argument. Nothing is inherently worthwhile but thinking makes it so. Such thinking should also be an informed thinking.

The hidden culture curriculum theory of Jackson, Searle, and Murdock (1974) claims that the curriculum should derive its content from the actual interests, pursuits and cultural values of the social background of the child in question. In other words curriculum should be society-based. Murdock (1974) contends that what goes on in schools is primarily determined by

the demands of dominant groups. There is no doubt that the hidden culture curriculum theory verges on imposition of curriculum content. However, there is nothing wrong with an imposed curriculum provided what is imposed is worthwhile. In other words the imposed curriculum is worthwhile to the extent that it can facilitate the realization of the objectives for which it has been designed. If for instance, learning according to Dewey (1963) becomes acquisition of what already is incorporated in books and in the heads of elders, as long as such learning is a product of a worthwhile curriculum, it is relevant. Even Goodman's principle of "socialization" instead of formal education in his "Deschooling theory" (Goodman, 1969) is relevant to the extent that it satisfies the basic requirements of worthwhileness.

So far efforts have been made to examine various shades of opinion about what should be the boundaries in selecting curriculum objectives and curriculum content. It must be noted that objectives and content of the curriculum are interdependent and interwoven. The roles that the child, and the society should play in the selection of curriculum

materials or curriculum content have been discussed by different authors. The role of knowledge in the same context has also been briefly discussed.

It is clear from the analysis so far made that, the child, the society and the subject matter play very significant roles in determining what should go into the school curriculum.

However, it must be pointed out that the roles of the child and the roles of the society are secondary if one considers the primary philosophy of knowledge. The earth as we know it is given. No person or any human society can claim to know what motivated the power that created the earth. All we are certain of is that the earth is what it is and there are some truths about it. Such truths about the earth are also given. They constitute the component parts of the earth. There are identified, clearly defined ways of uncovering truths about the earth. These are called forms of knowledge (Hirst, 1971) or disciplined ways of pursuing or discovering truth (Pring, 1976) or realms of meaning (Phenix 1964, Broudy, 1962) or modes of thinking (Peterson quoted by Whitehead, 1971). They are also described as

systems of rational belief (Watt, 1974) or kinds of disciplines (Schwab, 1962). These disciplines or forms of knowledge are therefore primarily basic and universal. They can also be said to be given or natural. Thus the influence of the disciplines in selecting the curriculum content is basically indispensable.

The disciplines not only influence what goes into the curriculum, they also exert some influence on the roles played by the child and the society or environment in selecting the curriculum content. For example, what the child or the society needs or wants depends to a large extent on what truths about the earth are available within the physical environment of both the child and the society. Such needs or wants can only be satisfied if there are means or ways of discovering truths about the earth that would make the satisfaction of such needs and wants possible.

"The forms of knowledge theory" by Paul Hirst (1965) is worthy of note as to the role of the disciplines in selecting content of the curriculum. In the theory, Hirst contends that there are eight

distinguishable cognitive structures called forms of knowledge and the acquisition of which must be the universal objectives for the curriculum. He argues that to be ignorant of any one form is to have a gap in one's mode of thinking and hence it is to be cut off from a large and significant area of experience. Hirst further argues that the central concern of education is the development of rationality or the development of rational mind. Also, he argues a development of mind and new knowledge means a new development of mind in some sense. Hirst contends that all knowledge and understanding is logically locatable within a number of domains namely: Mathematics, Physical Sciences; Human Science, History, Literature and Fine Arts, Morals, Religion and Philosophy. Hirst frowns at specialization and embraces general education. He contends that specialization in education narrows the mind and it is miseducative.

A quick look at Barrow's utilitarian thesis (Barrow, 1976) is necessary for a better understanding of the implications of Hirst's theory for curriculum context, design and development. Barrow's

utilitarianism is grounded on the premise that what matters ideally is a world in which every one is happy. He contends that pleasure and pleasure alone has intrinsic value. An activity, pursuit or way of life, according to Barrow, is worthwhile in so far as it promotes pleasure and/or minimises pain. Hence education should seek to develop individuals in such a way that they are in a position to gain happiness for themselves while contributing to the happiness of others in a social setting that is designed to maintain and promote happiness for all as far as possible.

Both Hirst and Barrow appear to have touched on certain fundamental and philosophical questions about the education of man. These questions include: What are the basic truths that man should endeavour to discover? What are the most effective ways of discovering such truths? To what extent can such efforts be considered worthwhile? Do the different forms of knowledge exhaust the different ways we conceptualize reality or seek truth?

Comprehensive answers to these questions are beyond the scope of this **thesis**. However, the question of what basic truths man should seek

depends on man's values and aspirations based on what he considers to be the ultimate reality of life. Here lies the significance of the roles of the individual and the roles of the society in selecting curriculum content.

In an attempt to answer the question: what are the most effective ways of discovering truths, Hirst has offered what he considers to be the eight fundamental forms of knowledge. That there are forms of knowledge or disciplines is not controversial. What is perhaps controversial is whether the forms of knowledge enumerated by Hirst are the only most effective ones available. It does not seem that scholars agree on this. This explains why school curriculum materials vary over time and space. Akin to this is the question of "worthwhileness". Worthwhileness in this context can be described as the usefulness or desirability of a particular type of knowledge vis-a-vis aspirations or anticipated outcomes.

It is very difficult to see how a particular type of knowledge is absolutely useless much so when man's interaction with the earth environment is



considerably unrestricted. If one considers this pattern of free interaction, one would be inclined to say that all available forms of knowledge are useful and should necessarily influence what goes into the curriculum. The issue therefore is worthwhileness in terms of effectiveness of given forms of knowledge in the realization of curriculum objectives.

Curriculum objectives are the proximate goals of education (Wheeler, 1967). Both goals are interrelated and interdependent. Therefore, the ability of a particular form of knowledge to make a valuable contribution towards the realization of the curriculum objectives is a measure of the effectiveness of that form of knowledge. It also determines to what extent such form of knowledge can influence the structure of the school curriculum. However, it must be noted that the so called different forms of knowledge are not mutually exclusive and can therefore not be dichotomized into definite distinct compartments. In selecting the curriculum content therefore there is an attempt at interdisciplinarity. This is a sort of curriculum synthesis as a means of introducing students to

different methods of inquiry and generalization. This plan according to Onwuka (1981) enables learners to conceptualize a whole field rather than narrow unrelated parts. Thus an effort is made to overcome the compartmentalization and atomisation of the curriculum. The doctrines of the core curriculum, social studies, humanities, modern geography and other forms of interdisciplinary associations are based on this broadfields' curriculum theory.

What kind of knowledge should a secondary school student possess in order to meet the demands of the present world, that is, the immediate environment and the world as a whole? This is the major question in our consideration of the roles of the disciplines in curriculum content selection. Two broad aims of secondary education in Nigeria are:

1. Preparation for useful living.
2. Preparation for higher education (National Policy on Education 1981: 16).

The national policy on education is by itself a state proclamation which is an important variable that influences or even determines the content of the school curriculum. The statements that the junior

secondary school will be both pre-vocational and academic, and that the senior secondary school will be comprehensive but will have a core-curriculum designed to broaden pupils knowledge and outlook (N.P.E., 1981: 17) shows that the society represented in this case by the Federal Government also plays important roles in selecting the schools curriculum content.

However, being able to live usefully and effectively in this enormous world which is more or less a large ecosystem with various components and dimensions require knowledge of truth about the quantitative values of the ecosystem; truth about the qualitative characteristics of the ecosystem; truth about its inhabitants; truth about forces of nature, truth about patterns of spatial arrangement, spatial organisation, spatial integration, spatial synthesis and spatial processes of earths phenomena within the world's broad ecosystem. Here lies the significance of the roles of the different disciplines in selecting the school curriculum content. Although Jowitt (1937) is of the opinion that "curriculum in schools should be thought of not in terms of

knowledge to be acquired but in terms of life to be lived." The question one wants to ask is: which of the two ideas comes first - "knowledge to be acquired" or "life to be lived"? It is definitely "knowledge to be acquired" that comes first. An unknowledgeable person is as bad as a non-living person. The fact that man is able to live presupposes that he has acquired knowledge of the means of livelihood.

The contention of the advocates of primacy of subject disciplines therefore holds. However educators should be careful of extreme and arbitrary curricular decisions. Efforts should be made to base curriculum decisions not only on bodies of knowledge but also, to a considerable extent on the nature of the learner and the nature of the society.

There is, however, no doubt about the fact that subjects systematically provide disciplined knowledge and so give training in special systems of thought. In other words knowledge reservoir is established through exposure to different subject or disciplines. This argues for multidisciplinary approach to curriculum content selection in schools. There is a diversity of the various ways of seeking truth

about the world as the home of man coupled with the fact that no one of the ways can claim solitary, absolute perfection in the discovery of truths about the world. This fact shows very clearly that selection of the school curriculum content should be seen through a comprehensive perspective **of** the disciplines.

The content of modern geography curriculum is better seen against this background. Apart from making use of concepts and strategies adopted by other disciplines, modern geography adopts its own unique spatial approach to the study or discovery of truth about the earth-environment or about earth phenomena that have spatial dimensions. In other words modern geographic knowledge is concerned primarily with world ecosystematic truths that have spatial dimensions. Like any other form of knowledge the geographic knowledge is a worthwhile knowledge. The question of which knowledge is the most worthwhile is a different issue. It is not only different, it is relative and very subjective. The extent to which it is practically possible to disseminate new ideas in geography education from the point or points of origin of such ideas to given

systems or sub-systems of education forms the next theme of this writers' discussion.

#### 2.4.3 The Feasibility of Curriculum Change

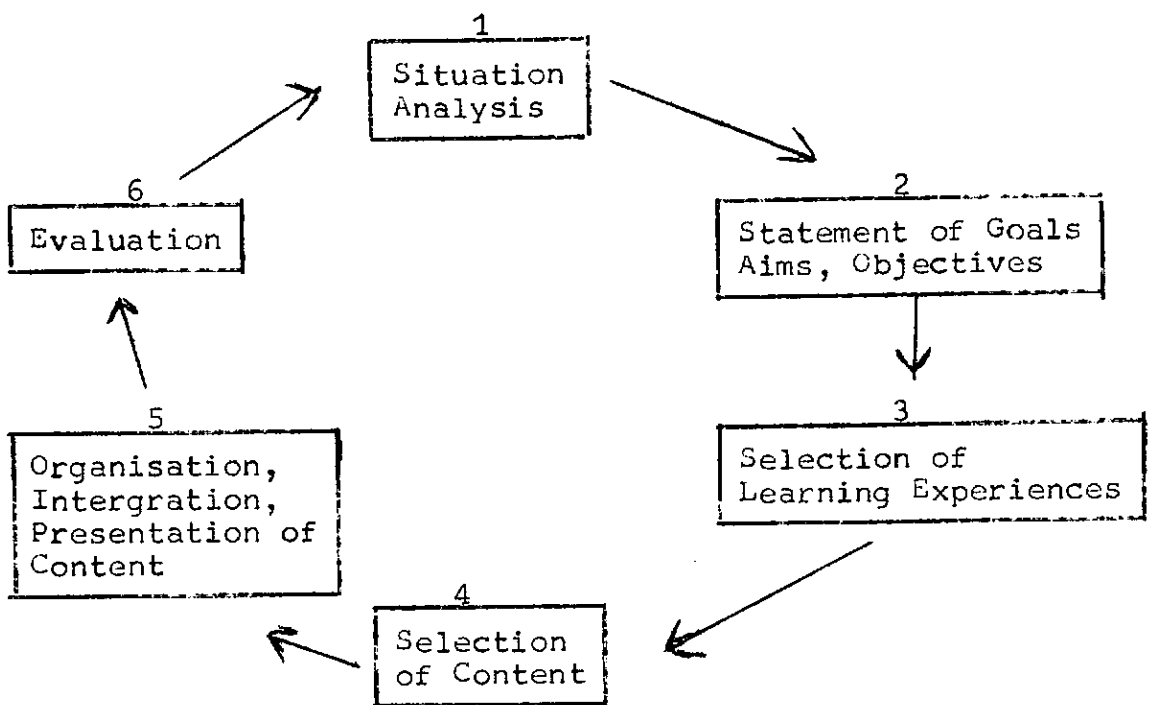
The concept of curriculum change can be likened to the process of social change which consists of three sequential steps: (1) invention-process by which new ideas are created and developed; (2) diffusion-process by which the new ideas are communicated to the members of a social system and (3) consequences-changes that occur within a social system as a result of the adoption or rejection of the innovation (Carlson, 1965).

Unlike the social process, however, the curriculum change or innovation has more than three sequential steps. The full account of the life cycle of a curriculum innovation according to Carlson (1965) is "the story of its invention, development and promotion, adoption, diffusion, and demise" (Carlson 1965: 4). Even so, the notion of renewal is common to both the social change and the curriculum change processes.

Curriculum change can therefore be described as a process of curriculum renewal which involves any or the combined acts of adding to, subtracting, substituting or modifying the existing set of planned learning experiences offered to the learner under the guidance of the school. Such additions, subtractions; substitutions, and/or modifications constitute new curricular ideas generally referred to as curriculum change.

The need for a curriculum change is better explained with the aid of a curriculum process model:

Fig. 1:            The Curriculum Process  
                         Model



(Adapted from Wheeler, 1967)

The phases of the curriculum process are numbered 1-6.

Phase 1: Situation Analysis

Here, one looks critically at the prevalent circumstances within a given social environment which could be a state or a country. The prevailing circumstances could be social, economic, political or the three combined. Such situation analysis involves making a close study of what is in the light of what should be. It involves making a critical assessment of the problems and potentialities within the social environment. It also involves a re-appraisal of values, failures, successes and overall achievements of the social group.

Phase 2: Statement of Goals, Aims, Objectives

The values, hopes, and aspirations of the social group would now be transformed into goals, aims and objectives from the viewpoint of the prevailing social, economic and political situations within the society.

Phase 3: Selection of Learning Experiences

There are many ways of acquiring knowledge, attitudes and skills through interaction with



the physical environment. Experiences acquired through one's interaction with and/or reaction to any given physical environment are often referred to as learning experiences. Learning experiences are more or less instruments for achieving the goals, aims and objectives stated under phase two with a view to changing the situation in phase one. These learning experiences are numerous. There is therefore a need for a careful selection of relevant ones that are capable of making it possible to realize the stated goals, aims, and objectives.

#### Phase 4: Selection of Content

Content here means "knowledge, skills, concepts principles, attitudes and values to be learned" (Onyike, 1981). These attributes are contained in the various learning experiences already selected. However within a given learning experience, there could be scores of what can be known or of attitudes and skills that can be acquired. Some of the knowledge, attitudes and skills are either relevant or irrelevant vis-a-vis the goals, aims and objectives in phase two

that are based on the values, problems and opportunities observed in the situation in the society. There is the need, therefore to select relevant worthwhile knowledge, attitudes, skills, concepts, principles and values from the selected learning experiences.

Phase 5: Organisation, Integration and Presentation of Content

This phase deals essentially with orderliness and consideration for the process of curriculum-learner interaction. Efforts are made to arrange the curriculum content in a logical sequence; and in a well integrated form to facilitate curricular material presentation and thus ensure effective learning on the part of the learner.

Phase 6: Evaluation

This involves essentially a re-appraisal of the situation. **In other** words, the evaluator assesses in different ways the effectiveness of the curriculum in terms of the changes that have occurred in the learners; the degree to which the stated goals, aims and objectives have

been realized and hence the changes that have occurred in the original societal situation.

It must be noted that if changes have occurred in the situation as a consequence of changes in individuals and resultant realization of the goals, aims and objectives; then, of course, there would emerge a new situation. The emerged new situation would definitely be characterized **by** new problems and potentialities; new hopes, values and aspirations which would invariably call for new set of goals, aims and objectives. The new set of goals, aims and objectives would normally call for a new set of learning experiences, new content, new methods of teaching and new strategies for evaluating learning and curriculum programme effectiveness.

From the foregoing analysis, it can be seen that the curriculum process is a continuous, dynamic, circular process. Human behaviours, human beings themselves and the societies which they form are **ever** growing living organisms exhibiting diverse and dynamic characteristics. Human values, hopes and aspirations assume ever changing or metamorphic dimensions. There is therefore an ever increasing

demand for new knowledge, attitudes and skills to meet the challenges of ever changing situations. This explains why curriculum change has become very inevitable. As rightly pointed out by Carlson (1965), "a rapidly developing culture in which knowledge is greatly expanding and technological advances are common place, school systems are pressed to and do seek change in their educational practices." Besides, adoption of new educational practices is only one means by which school systems attempt to adjust to their environment. Thus curriculum should be reviewed, revised or changed so as to take account of changes not only in the social order and social priorities but also changes in knowledge. There is need for a curriculum change when it is observed that the existing curriculum does not provide effective opportunity for the realization of a newly identified goal. There is a need for curriculum review when public opinion is against the existing one or when, like in Nigeria, there is mass unemployment or diversification of qualities of education. There is also a need for curriculum change when, as in Nigeria today, there is an attempt to move away from the traditional system of education to a new one.

Curriculum innovation could be initiated by any of the following change agents: professional associations, teachers, ministries of education; curriculum development institutions; schools; universities or international organisations. The curriculum change initiator could derive his motivation from personal experience, literature review, participation in academic conferences, seminars or workshops; social contact **with other innovation adopters** or change initiators; and from official proclamations like the National Policy on Education.

Three models of curriculum change have been identified (Havelock, 1971, Balogun, 1983). The three models are: Research development and Diffusion (RD & D) model; Problem Solving (P.S) model; and Social Interaction (S.I) model. In the RD & D model, the change agent decides on what to change, finds means of bringing about the change, promotes the change through training, demonstration, etc., gets the change adopted and finally if possible makes change part of the on-going system through the process of institutionalization. In the problem solving or P.S. model the urge for change comes from

the user or receiver otherwise known as client which could be an individual teacher, school or a whole nation. The client feels the need for a change. He analyses, diagnoses, and clarifies what it is that needs to be changed. He looks for and finds ways of satisfying the needs. He buys or accepts the new approach, that is, he adopts the innovation. He eventually tries it out to determine the extent to which the innovation or adoption of it meets the desired change. **In other** words, he tries and evaluates the innovation.

In the social interaction or S.I. model like the P.S. model, change activities centre around the individual user who gets to know about a new idea, textbook, method or audio-visual material. He develops interest in it. He then assesses the attractive innovation mentally to see if it will be useful to him. He then buys or accepts the idea for use if found useful. He then keeps the idea permanently if it meets his needs. In other words, he adopts the new idea. It must be noted that the awareness of the new idea now adopted might originally have come in various forms like advertisements;

workshop, seminar or conference papers and discussions; or a piece of information from a colleague.

Curriculum change could be planned or unplanned. When it is planned, it is value-based and could be external to the target population. When this happens, it is said to be revolutionary. Otherwise it is evolutionary; that is to say it is unplanned. It is based on change of interest, value aspirations and consequent gradual modification of the curriculum.

Curriculum change strategies can also be referred to as being empirical-rational when there is a change proposer with a clearly defined target population. Changes could also be said to be normative-re-educative when values, attitudes, beliefs change through a process of gradual re-education. Thirdly, curriculum change could be imposed by a legitimate power like the State or Federal Government.

In secondary school geography education for instance, attempts have been made at Research Development and Diffusion (RD & D). This is evidenced by the conceptually based secondary school geography syllabus recommended in 1980 by the High School

Geography Committee (H.S.G.C), an arm of the Nigerian Geographical Association (N.G.A.). However, the curriculum change process did not go beyond deciding on what to change.

However, the current geography curriculum change going on in the universities and gradually being adopted by some secondary school geography teachers is based essentially on the social interaction (S.I) model. The possibility of its total adoption and diffusion especially by teachers can now be examined in greater detail.

The question of how new ideas and practices spread from their point of origin and gain widespread adoption is central to any system of planned change on a large scale. As rightly pointed out by MacDonald and Walker (1976), "the enduring problem that has plagued the sponsors and planners of curriculum innovation is not the problem of creation but the problem of impact, the failure to achieve anything like mass conversion to new aims, new content and new approaches that they (planners and sponsors) aspire to" - (MacDonald and Walker 1976: 4-5).



The issue therefore is not whether a new curricular idea can be created. Rather the question that demands an urgent answer is: to what extent can the new idea be adopted and successfully diffused to affect educational practice in the school system? It must be noted that an important element in all approaches to planned change, according to Chin and Benne (1979) is "the conscious utilization and application of knowledge as an instrument or tool for modifying patterns and institutions of practice" (Chin and Benne, 1979: 33).

There is no doubt that curriculum change can often be resisted. Factors affecting curriculum change and rates of adoption of any curriculum innovation have been identified (Carlson, 1965, Balogun, 1983). Such factors include: the characteristics of the adopting unit (teacher or any social group); capital, conservatism; organisational health of the school and diffusion opportunities.

Assuming the adopting unit is a teacher, the success or failure of curriculum change **depends** largely on the involvement of the teacher or lack of his involvement in the change process. Also the

ability, quality, training and consequent technical-know-how of the teacher would go a long way to affect what contribution he can make towards a curriculum change. Apart from these personal qualities, the social status of the teacher has been found to be an important determinant of the curriculum change success (Carlson, 1965). Using a sociogram to illustrate adoption patterns among sociometric pairs, Carlson contends that "responses to communications received by an individual are regulated or mediated by the relationship and interaction that the individual has with his reference groups or those persons who are important to him" (Carlson 1965: 17). Carlson further argues that the rate of adoption of new curricular idea or practice is related to the way in which a school superintendent or head teacher fits into the general order of friendship choices and friendship groups. Carlson discovers a positive relationship between the teacher and his social position measured in terms of social network involvement and overall social status in terms of education; professionalism, prestige and opinion leadership. The summary of Carlson's ideas is that if an adopting

unit (e.g. teacher) is well respected within a social group like the school or the society as a whole; he assumes a privileged position to influence the curricular decisions and activities of others within the same social setting.

There is no doubt that the teacher is an important curriculum change agent. He is capable of effecting curriculum change if he is adequately involved in the change process. Also, if he develops requisite abilities and technical-know-how through relevant training and he is well socially disposed to influence others he is likely to make valuable contribution to curriculum change.

Curriculum change involves a lot of resource utilization. This includes capital expenditure on the following: preparation of new textbooks; training and/or re-training of teachers to execute the new programme; purchase of audio-visual materials for the effective presentation of the new curricular materials and conduct of series of educational research to determine the relative effectiveness or otherwise of the new programme. The huge sum of money to be expended on curriculum change is capable of limiting the scope of the change.

Naturally, human beings and human institutions are considerably resistant to change. Conservatism is an enemy of innovativeness. Innovativeness or adaptability may be defined as the ability to take on new ideas or new practices and discard outmoded ones. However, development of such ability by a prospective adopting unit depends largely on the feasibility of change considered against the background of the restrictions imposed on the change process by tradition. Thus it could be argued that a curriculum innovation that is divorced from the demands of the West African Examination's Council may not be easy to adopt in the secondary schools.

Another factor that influences curriculum change in the school is the organisational health of the school in terms of how the new idea fits into the operational system of the school.

For example, adoption of a new idea may make extraordinary demands on the time table, the school space, audio-visual materials and resource personnel. Unless the operational system of the school favours such demands, they may not be met.

The extent to which teachers are aware of the new developments coupled with the predominance of

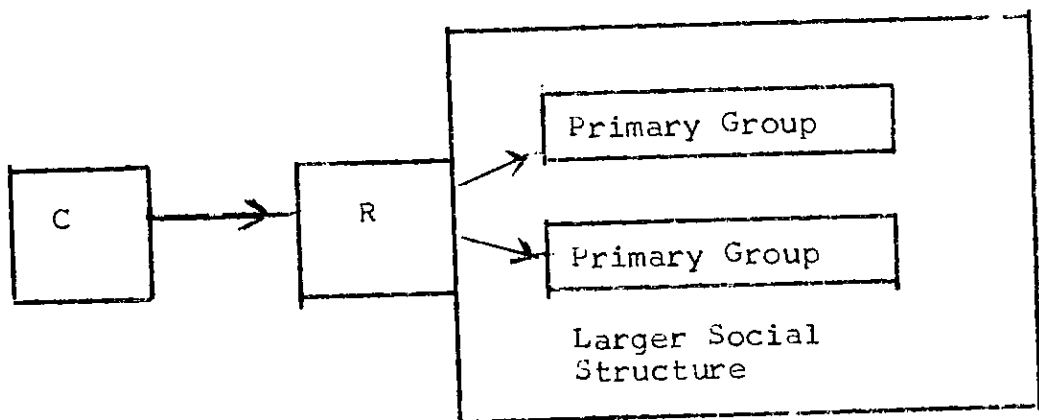
opportunities or lack of opportunities for the dissemination of the new ideas also affect the feasibility of curriculum change. Giving an explanatory framework on varying rates of adoption of educational innovations Carlson (op.cit) argues that the rate of acceptance of a new practice or idea by individuals or adopting groups depends on three major factors. These are:

- (1) the characteristics of the adopting unit  
(Individual and/or group),
- (2) the way the adopting unit is joined to  
communication channels and source of information,
- (3) the position the adopting unit holds in the  
social structure of like units (Carlson  
op.cit: 5).

Carlson seems to have based his argument on the "communication two-step flow hypothesis" of Katz (1957). The hypothesis in the original form proposed that "influences stemming from mass media first reach 'opinion leaders' who, in turn, pass on what they read and hear to those of their everyday associates for whom they are influential" (Katz 1957: 61). The hypothesis is probably based on the

assumption that there are mass media servicing a social stratified community. Katz contends that in the process of curriculum innovation adoption, there is an original communicator of a new idea, a receiver or mediator, and individuals or social groups within a large social structure. The itinerary of adoption is illustrated by the following refined two-step flow hypothesis diagrammatic model:

Fig. 2: Refined Two-Step Flow of Communication Hypothesis Model



Note C = Communicator  
or carrier of the new message e.g. mass  
media, resource personnel.

R = Receiver of the new message e.g. individual  
or reference groups.

(Adapted from Carlson, 1965).

It is argued that the two-step flow hypothesis suggests that mass communication messages are mediated by the reference groups of the recipient and the social structure in which they are embedded. In other words, when a school head reads or hears about modern geography, for example, the hypothesis suggests that his response is not directly determined by the message but is determined largely by his relationships with other persons whom he sees as important to him.

This brief discussion of factors affecting curriculum change is intended to throw some light on the extent to which any or all of them could affect the school geography's curriculum change. Studies have shown that a considerable percentage of the Nigerian secondary school geography teachers are not adequately trained for geography teaching assignment (Akande, 1979, Okpala, 1980, Okunrotifa, 1973, Abegunde, 1977). Besides, it is evident that most geography teachers are not involved in the curriculum development process. Consequently it could be argued that the teacher factor is likely to have a negative effect on the feasibility of the school curriculum change. Any possible negative effect that the

teacher factor might have had on the feasibility of curriculum change has been removed by the combined efforts of the university geographers, the Nigerian geographical association (N.G.A) and the High School Geography Committee (H.S.G.C). These bodies apart from publishing series of articles on the new developments in geography education, they had organised series of conferences, workshops and seminars for the dissemination of the new idea in geography. In such new ideas-diffusion strategies, many secondary school geography teachers were involved. With the process of social interaction, such participating geography teachers had probably disseminated the new ideas to their colleagues in their respective schools. This probably accounts for the general awareness of the modern trends in geographic thinking observed among secondary school geography teachers in a pilot study conducted by this author.

It is therefore easy to see from the foregoing that the "teacher-awareness" is not in anyway an impediment to curriculum change in the Nigerian secondary school geography.



Perhaps, what stands out as a possible threat to the anticipated curriculum change is the "conservatism" imposed by a desire to adhere strictly to the rules and regulations of the West African Examinations Council. Every geography teacher wants to cover the geography syllabus or at least he wants to touch what he considers to be the most important topics. Very often, such teachers teach selected geography topics instead of giving a systematic and well integrated geography education to their students.

In actual fact, what appears to be conservative in the structure of the secondary school geography syllabus is nothing but a travesty of conservatism. The new designs in geography education can be executed without disrupting the organisational structure of the school and at the same time meet the demands of the West African Examinations Council. In any case, it is not the satisfaction of the requirements of the examination council or any examination body that really matters. Rather, the main purpose of geography education is contained in the third national educational objective as clearly stipulated in the National Policy on Education: "the training of the

mind in the understanding of the world around" (N.P.E., 1981: 8). Modern geography education can make a valuable contribution towards the realization of this national goal.

Modern geography requires the student to look at the world or any of its part; make a mental map of its various interacting phenomena; conceptualize its spatial problems and spatial opportunities; study such spatial problems and spatial opportunities with a view to finding solutions to such problems and suggesting ways of utilizing such opportunities. In the process, the relevant knowledge, attitudes and skills required to pass the school certificate geography examination and to live a happy and useful life might be acquired. It should be noted that passing an examination is only a means to an end and not an end by itself. The new thinking in geography can therefore be operated without necessarily setting any form of disequilibrium into the educational system. Conservatism is therefore not a threat to the adoption, and diffusion of the current curriculum innovation in school geography.

Also, there are opportunities for curriculum innovation diffusion to make curriculum change possible. The Nigerian geographical association annual conferences constitute a forum for disseminating new ideas in geography. The conferences are always adequately covered and publicised by the mass media. Besides, there are workshops, seminar meetings and journal publications by university teachers. All these create adequate opportunities for easy flow of ideas among different categories of geography teachers.

Most secondary school students are between the ages of twelve and eighteen years. Conceptualization, the main tool of modern geography is essentially a high intellectual exercise. Some people may wonder whether students at the secondary school age can make that kind of rigorous mental exertion. The fear has been dispelled by Piaget (1952). In his origin of intelligence in children (Piaget, 1952) he says: "A child is expected to ask questions of a more abstract nature in any subject as he passes from the concrete operations stage to the formal and logical operations stage." Piaget identified five stages of intellectual development:

- |  |              |
|--|--------------|
| 1. Sensory motor stage                 | 0 - 2 years  |
| 2. Pre-conceptual stage                | 2 - 4 years  |
| 3. Intuitive thinking stage            | 4 - 7 years  |
| 4. Concrete operations stage           | 7 - 11 years |
| 5. Formal and logical operations stage | 11+ years.   |

Thus at the secondary school age, the students should be able to conceptualize spatial problems relating to certain geographical situations. The question as to whether the students would be able to internalize the ideas of the new geography attracts a positive answer. The feasibility of this kind of curriculum change is evident.

The only problem one can envisage is, perhaps, the problem of textbooks. There is no doubt that the existing geography textbooks used in the Nigerian secondary schools are not likely to meet the demands of modern geography education. It therefore becomes expedient for the initiators of change to embark on production of curricular materials that are capable of meeting the challenges of the new dispensation. Even so, absence of concept-based geography textbooks does not disturb the take off of the new geographical practice. In actual fact, the use of modern geogra-

phical thought in geography education has more to do with teaching-learning situation than with textbooks. This is however, not to say that textbooks are not important. Even when relevant textbooks are available for a programme the effectiveness of such textbooks depends largely on teachers proper use. From the foregoing analysis, it is clear that the feasibility of curriculum change with regard to the school geography is quite obvious.

The role of the teacher in this kind of curriculum change is quite clear. As earlier pointed out, educational process can be likened to a manufacturing process. The school is the factory. The principal raw materials for the manufacturing activity are the child or the "learner" and the "curriculum". The end product of the school factory is a well educated or well developed and integrated person. Such a person if he is from the secondary school should be so prepared that he can live a useful life and be **equipped** with requisite qualities for further education. In the "manufacturing process" the teacher as a factory man is the principal actor. He effects an interaction between the learner and the curriculum.

The curriculum then acts as a catalyst that is capable of changing the learner. But, unlike a true catalyst which does not change in the process, the curriculum changes over time and place depending upon the requirements of the learner, the environment and the subject matter itself. The amount and quality of the curriculum used by the teacher depends on what he desires to produce. The issue of teacher's perception of educational objectives therefore becomes relevant. What he teaches; the way he teaches; and the type of evaluation he makes; depend considerably on his conception of curricular goals.

This fact accentuates the significance of teachers awareness of curriculum change. However, awareness without adoption of curriculum innovation cannot be regarded as a complete curriculum change. The teacher adopts a new curricular idea when he makes use of such ideas in his lessons. The rate of teachers adoption however depends on whether he **is or she** is not involved in the evolution of the new idea. A teacher is likely to play a more effective role in bringing about a curriculum change if he is well involved in the change process. Once more one

can see the issue of feasibility of curriculum change from this perspective.

In the Nigerian context geography teachers are given adequate opportunities to participate in the development of the school geography curriculum. Geographical conferences, workshops and seminars are open to all categories of geography teachers. Geography teachers who are desirous of curriculum change can present papers in such conferences, workshops and seminars. Such teachers can also make their feelings or intentions known through publications in learned Journals like the Nigerian Geographical Journal (N.G.J). Also, the teacher can embark upon a form of pilot project in his school. He can embark on concept-based geography lessons on purely experimental basis with a view to comparing and contrasting the traditional and modern approaches to geography education. He can also embark upon modern textbook production. Those are some of the roles a geography teacher can play in ensuring curriculum change.

Curriculum change has implications for statement of geography educational objectives; teaching methods; and geography evaluation techniques. As earlier

indicated in the curriculum process model, curriculum change is based on the prevalent conditions of the situation. The prevailing conditions of the situation call for a statement of new goals, aims and objectives. New goals, aims and objectives require new set of learning experiences (i.e. new curriculum) to achieve the stated goals. Details of the learning experiences are spelt out as content. The new curricular content demands new organisation, new way of integrating curricular materials and new ways of presenting to the learners the newly organised and well integrated curricular content. Finally the new method of teaching the content calls for a new way of evaluating not only learning on the part of the student but also evaluating curriculum effectiveness in terms of to what extent it has helped in changing the original situation. This is looking at the implications of curriculum change through a rather wide and purely theoretical perspective.

Modern geographic thought as a curriculum change has specific implications for the teaching-learning situation. Whether the teacher is teaching within the four walls of the classroom or he is



teaching on the "field" which, of course, is the "geographers laboratory", his primary concern is the development of the cognitive power of the learner. In other words he tries to develop in the learner certain cognitive behaviours that would enable the young geographer to conceptualize, study, interpret results and offer suggestions for the solution of definite spatial problems. In the process he makes more use of "concepts" about "place" than he makes use of items of information about features.

Relevant skills and attitudes are acquired as by-products of this kind of cognitive development. Thus geography lessons become essentially concept-based. Consequently the number and quality of cognitive behaviours exhibited by the geography students become the focus of evaluation.

On the whole this discussion has shown that the disciplines play some important roles in determining the content of the school curriculum. It has also shown the fact that, even though, change in any social system or sub-system is always faced with a lot of problems, yet change is always possible if it is considered worthwhile by the people. The new

geographical knowledge is undoubtedly worthwhile. It is a curriculum innovation whose adoption and diffusion are quite feasible.

## 2.5 The Conceptual Framework

This study is based predominantly on the currently used three organising frameworks for describing where things are and for explaining how things are locationally related. These frameworks have been described by Philip Boden (1976) as "conceptual", "Systematic" and "Regional". The study also adopts the Magers and Tylers-Style-Objective models (Mager, 1962, Tyler, 1949) and the format of Bloom's analysis of cognitive behaviours (Blooms and others, 1956) adopted by Bakare in his work titled "levels of cognitive functioning tested by past school certificate geography examinations" (Bakare, 1969).

There are three ways by which a geographer can study a geographical phenomenon. He can study the characteristics and the absolute location of a tangible, accessible, or observable geographical phenomenon. When he does this, he can be said to be making a systematic study. A geographer may also concentrate on the characteristics and situational location of a place thus making a regional study.

On the other hand, a geographer may be concerned not with things and places but with ideas about the locational characteristics of things and/or places that have evolved through spatial interaction and spatial processes of and within things and places. This type of study can be labelled "a conceptual study".

As rightly pointed out by Boden (1976) systematic studies focus on distinctive features in the landscape and their particular locational characteristics while the focus of regional studies is on sub-units of the earth's surface or area. On the other hand, in the words of Boden, the conceptual studies bring together in one approach many recent developments in geography education and the focus is on ideas and emphasis is on the significant terms and theories which geographers use to describe and explain the characteristics of location. These three basic frameworks: Systematic framework, regional framework and conceptual framework have given rise to three types of geography lessons: Systematic geography lessons; regional geography lessons and conceptual geography lessons (Boden, 1976: 2). As earlier quoted in this chapter, the

Department of Education and Science (D.E.S) in Britain used these three frameworks in carrying out its survey No. 19 designed to assess the impact of modern geographic thought on secondary education in certain parts of Britain. (D.E.S., 1974)

In a systematically based geography lesson, students are made to learn about specified locational characteristics of named feature or features. In a regionally based geography lesson, students are made to learn about the locational characteristics of one particular piece of land-scape. In a conceptually based geography lesson, students are made to learn ideas about location that can be applied generally. While both systematic and regional geography lessons are characterized by chorographic (facts cataloguing) analysis (Akinola, 1975) and cause-effect environmental determinist model used by traditional geographers to study man-land relationships the conceptual geography lessons are characterized by scientific analysis; explanation of processes, showing relationships and making deductions.

Consequently, a high frequency of conceptually based geography lessons is considered an index of

high impact of modern geographic thought on geography education. This idea is supported by Philip Boden's declaration: "Conceptual revolution in geography is the key to our understanding of the so-called new geography in schools" (Boden, 1976: 4).

In studying types of educational objectives, this researcher has adopted a synthesis of Mager-style-objective and Tylers-style-objectives.

The three components of Mager's objectives: "behaviour", "condition" and "standard" were combined with the two components of Tylers objectives format: "behaviour" and "content" to produce four characteristics of an educational objective: 'behaviour', 'content', 'condition' and 'acceptable level of performance.' The rationale for doing this is that educational objectives have been defined as "more or less precise statements of what a student should be able to do as a result of completing (part of) a course. They describe what the students should be able to do at the end of their course that they would not do (at least not as well) at the beginning" (University Teaching Methods Unit UTMU, University of London 1976; 112-123).

By this definition, educational objectives are concerned with changes in behaviour practically demonstrated. The demonstration involves observable action (behaviour) which is a response to a given stimulus (learning experience or content) exhibited under a given, chosen or understood circumstance (condition) with a view to attaining a specified standard (acceptable level of performance).

For example on a "new geography" topic like "crime distribution in Kwara State" (Oyebanji, 1980) the following could be an educational objective:

"At the end of the lesson, the students, with the aid of crime distribution map of Kwara State, should be able to mention at least three most dangerous local government areas of Kwara State."

Analysis:

- (1) Behaviour = Mention
- (2) Content = Dangerous local government areas of Kwara State
- (3) Condition = Looking at the crime distribution map of Kwara State.
- (4) Acceptable Level of Performance = Not less than three of such dangerous local government areas of Kwara State should be mentioned.

In a fairly comprehensive, well formulated educational objective, these four characteristics can be conveniently incorporated.

The concepts of high and low cognitive responses and evaluation questions used in this study are adapted from Bloom's analysis of cognitive behaviours and adopted by Bakare (1969). The first three levels of cognition: knowledge, comprehension and application are classified as low cognitive domain while analysis, synthesis and evaluation are classified as high cognitive domain. These classifications are in line with Bloom's taxonomy and Bakare's classifications of cognitive functioning.

## 2.6 Hypotheses

In the literature, a lot of issues have been raised concerning teacher quality in relation to method of teaching; absence of and/or inadequacy of educational objectives formulated by teachers; lack of adequate student participation in classroom lessons; the quality of evaluation questions and the nature of students responses to evaluation questions.

Miller (1948) quoted by Hubbard and Stoddard (1979) was of the opinion that there was a relationship between the quality of a geography teacher and the type of image of geography presented to students by the teacher in the teaching-learning situation. The quality of geography education has also been found to be associated with teacher quality in Nigerian schools (Okplanma, 1977, Abegunde, 1977).

Some geography lessons have been found to have poorly formulated or no instructional or educational objectives (Okunrotifa, 1973; Okpala, 1980). School certificate geography evaluation questions have also been found to be predominantly concentrated on the lower levels of cognitive functioning for a period of ten years (1956-65) - (Bakare, 1969). Further more, the West African Examinations Council's Chief Examiner's annual report indicates every year the relatively poor quality of students' responses to geography evaluation questions.

As earlier indicated in chapter one, about 98% of the geography teachers used for the pilot study conducted by this researcher were aware of the new changes that have taken place in geography.



In the same pilot study, it was discovered that there are four categories or types of geography teachers in Nigerian secondary schools: Graduate Untrained Teachers (GUT); Graduate Trained Teachers (GTT); Non-graduate Untrained Teachers (NUT); and Non-Graduate Trained Teachers (NTT) - see definition of terms. Even within each category of geography teachers "conceptualization" was ranked very high as a symbol of the so-called new geography.

Consequently, for geography education to be described as having been affected by modern geographic thought, it has to be conceptually based. In other words, geography lessons have to be conceptually based or approaches to geography teaching have to be predominantly conceptual rather than systematic or regional.

Systematic and regional approaches to geography teaching have been referred to as traditional geography teaching strategies (Boden, 1976: 1-20) which give little or no opportunities for student active participation in geography lessons (Okunrotifa, 1973, Majasan, 1969).

Besides, if most geography teachers are equipped with the new geographic knowledge as revealed by the pilot study, one would expect their statement of educational objectives; and their approaches to geography teaching to be identical. Also, since conceptualization deals more with the higher levels of cognition, one would expect teachers' evaluation questions and students' responses to such questions to be concentrated more on the higher level of cognitive functioning than on the lower level of cognition.

On the basis of all these research-based and non-research-based assertions the following hypotheses have been formulated:

- (1) The four categories of geography teachers would not differ significantly in their formulation of geography lesson objectives.
- (2) The four categories of geography teachers would not differ significantly in their approaches to geography teaching.
- (3) Trained geography teachers and untrained geography teachers would not differ significantly in their **presentation of the current ideas in geography.**

- (4) Students' participation would not differ significantly in regional geography lessons; systematic geography lessons and conceptual geography lessons.
- (5) The number of lower order cognitive lesson evaluation questions would not be more than the number of the higher order cognitive lesson evaluation questions.
- (6) The proportion of the students lower order cognitive responses to both lower order and higher order geography lesson evaluation questions would not be less than 0.5.

## CHAPTER III

### RESEARCH DESIGN AND METHODOLOGY

#### 3.1 Research Design

A panel survey design defined by Labovitz and Hagedorn (1971; 62) as "repeated observations on the same sample over a period of time" was adopted in carrying out this study. The rationale for this is that the variables to be measured are better observed in a teaching-learning situation. The teaching-learning situation is a polymorphous phenomenon that exhibits its diverse forms and characteristics at different times and places. For example, formulation of lesson objectives, strategies for lesson presentation; the classroom climate in terms of student-teacher interaction, student participation in lessons; lesson evaluation mechanism and students' responses to lesson evaluation questions all vary over time and space with individual teachers and among teachers generally. Consequently, to be able to have a true picture of what obtains in the schools with regard to geography education,

one has to visit the schools frequently and over a period of time. This exactly is what has been done in this study.

### 3.2 Target Population and Sampling

The target population consisted of all geography lessons delivered by all geography teachers in classes three, four and five of Nigerian secondary schools. Geography lessons are not offered in classes one and two in most Nigerian secondary schools because of the introduction of social studies into the first two years of the secondary education programme. Besides, if research efforts had been concentrated on a particular class of the secondary school, certain categories of geography teachers would have been left out. Most non-graduate auxiliary or untrained teachers and non-graduate trained or professional teachers do not teach beyond secondary class four as clearly shown by the initial pilot study.

A multi-stage stratified random sampling device was used to select the schools where the various geography lessons would be observed.

The names of nineteen states of the federation were written separately on pieces of paper which were folded, put in a container and shuffled properly. Five states were selected randomly from the container through the process of "drawing from the hat". The number of states was limited to five for two reasons.

The findings of the preceding pilot study which covered ten States of the Federation had shown that the four categories of geography teachers in Nigerian secondary schools were available in each of the ten States used for the study. Since the ten States were randomly selected, one would expect a similar distribution of geography teachers in the remaining nine States not included in the pilot study. Consequently, a study based on only one State could as well have given one an opportunity to observe geography lessons given by the different categories of geography teachers that are available in Nigeria.

Secondly, for a more effective result, the present study requires intensive rather than extensive observation. On the other hand, such an intensive observation requires a relatively high frequency of visits to schools. Therefore, for economy of time,

effort and other resources this investigator thought that a research effort concentrated on a fewer number of States might serve a useful purpose.

Using available West African Examinations' Council (WAEC) - list of schools, schools in the five States were stratified into "very-attractive-centre-schools" and "not-very-attractive-centre schools (see definition of terms, 1.6). With the same process of "drawing from the hat" five schools were randomly selected from each of the strata. A total of ten schools were thus randomly selected for this study.

Within each school, geography lessons were grouped into three for each of classes three, four and five:

- (a) first term geography lessons
- (b) second term geography lessons
- (c) third term geography lessons.

The terminal geography lessons were further classified into:

- (i) early term geography lessons
- (ii) middle term geography lessons
- (iii) late term geography lessons.

The purpose was to get a true picture of geography education in each class at different times of the school term throughout the whole session. A total of 270 geography lessons was proposed by the researcher.

### 3.3 Instruments

Observation and questionnaires were the major devices used for data collection. Two types of questionnaires were used: the modern geography questionnaire (M.G.Q) constructed by this researcher and the Geography Lesson Observation Schedule (G.L.O.S) also constructed by this researcher. The various curricula innovations, asserted by eminent geographers, as symbols of "modern geography" were used to construct the modern geography questionnaire (M.G.Q). Such features of modern geography emphasized by different geographers all over the world include:

1. Emphasis on local studies.
2. Quantification.
3. Socialization.
4. Use of models.
5. Problem-solving studies.
6. Conceptualization.



The questionnaire was designed to assess the geography teachers' concept of the new geography in terms of which of the stated features best represents the modern geographic thought from their various points of view. The point of view to be expressed by each teacher was provided for by an inclusion of three rating boxes in respect of each asserted "feature of modern geography" as in Appendix I. By a test and re-test device, with about two weeks interval and using ten randomly selected geography teachers, a correlation co-efficient of 0.96 of the tests was considered high enough to make the instrument very reliable.

The second questionnaire was a scheduled type of questionnaire having five sections:

- Section A = The geography teacher's particulars
- Section B = Facts of each geography lesson taught
- Section C = Field activities in geography teaching
- Section D = Performance in school certificate  
geography examination 1976-82.
- Section E = Geography textbook(s) in use.

(see Appendix II)

The structure of the questionnaire was based mainly on the variables that formed the subject matter of the study: characteristics of geography lesson objectives, geography teaching approaches; frequency of students' participation in geography lessons; geography lesson evaluation questions; quality of students' responses to evaluation questions; field activities in geography teaching, performance in school certificate geography examination and literature in use. Copies of the original draft of the questionnaire were given to experts in geography and curriculum studies for moderation. The moderating experts included a professor of geography.

Suggestions and corrections made by the different experts were reflected in the final draft of the questionnaire. A joint trial administration of the reformed questionnaire was carried out in ten geography lessons of five selected schools in Lagos metropolis. The joint trial administration involved observation of a geography lesson by two people (the researcher and one other person) at the same time with a view to comparing data collected. Analysis of correlation co-efficient of each pair of observations was made and a mean correlation co-efficient

was found by adding the values of all correlation-coefficients and dividing the total value by the total number of joint observations. The mean coefficient of correlation was found to be 0.95. This correlation co-efficient value coupled with the experts moderation was considered safe enough to be used as a measure of the instruments' reliability.

#### 3.4 Administration of Research Instruments

In a preliminary investigation that preceded the present study the modern geography questionnaire (MGQ) was administered geography teachers in ten States of the Federation through the assistance of the Correspondence and Open Studies Unit (COSU) students who came to the University of Lagos from various parts of the country for their 1979/80 Summer Course. The students who were predominantly Postgraduate Diploma in Education (PGDE) students were instructed by the researcher on how to administer the questionnaire. To maximize returns, self-addressed stamped large envelopes were distributed to the prospective questionnaire administrators by the researcher. A few of the selected schools not represented by any COSU student were personally visited by the

researcher for the purpose of administering the questionnaire.

The same set of students also assisted in administering the Geography Lesson Observation Schedule (GLOS) in the ten States: Anambra, Bendel, Borno, Kano, Kwara, Lagos, Ogun, Ondo, Oyo, and Plateau. On the whole 260 geography teachers in ten States responded to the Modern Geography Questionnaire (MGO). The Geography Lesson Observation Schedule (GLOS) was administered in 204 geography lessons of thirty four different schools within the "ten-State-region".

In the main study emphasis was on intensity of investigation and on the ability of the field research assistants to use the research instruments effectively. Consequently, graduate geography teachers in nearby schools not involved in the study were appointed by the researcher as paid research assistants. The graduate teachers were adequately instructed by the researcher on how to administer the scheduled questionnaire. Pocket-micro-tape recorders were given to some of the research assistants for purposes of cross-checking data collected through the research

instruments vis-a-vis the actual facts of the lesson as recorded by the micro-tape recorders. However, the tape recording device is only useful for cross checking the data on section B items of the schedule which, of course, is the most volatile section of the schedule.

Questionnaires were administered three times within each term: beginning of the term, middle of the term and towards the end of the term before terminal examinations. The strategy was to ensure a comprehensive sample of geography lessons based on different topics throughout the year.

During the one-year-observation period, a total of 256 geography lessons were observed. This figure represents 94.8% of the total number of lessons proposed by the researcher.

### 3.5 Data Analysis

Both descriptive and inferential statistics were used in summarizing the findings of the study.

Most of the data collected were based on the frequency of occurrence of specific events or variables and on the relative proportional value of such occurrences. Consequently, the chi-square ( $\chi^2$ )

distribution analysis coupled with analysis of proportion were the two statistics predominantly used in analysing data. In some cases, however, percentages were used to summarize data descriptively.

Items of information on teacher qualification, area of specialization and the training institution from which last qualification was obtained were used to categorize teachers into professional and non-professional teachers. The degree of professionalism was also identified by using information on the year of obtaining highest qualification vis-a-vis the area of specialization as contained in section A, items 2 and 3 of the GLOS.

Thus by group counting, the geography teachers were categorized into Non-graduate Untrained Teachers (N.U.T), Non-graduate Trained Teachers (N.T.T); Graduate Untrained Teachers (G.U.T) and Graduate Trained Teachers (G.T.T.).

The frequency of formulation of operational and non-operational geography lesson objectives by each category of geography teachers was computed into a frequency distribution table suitable for chi-square analysis. Each geography lesson objective

formulated by each teacher was also structurally analysed in terms of adequacy using a geography lessons objective characteristic (GLOC) table designed by the researcher.

Systematic Geography Lessons (SGL); Regional Geography Lessons (RGL); and Conceptual Geography Lessons (CGL) were physically counted as contained in Section "B" of the G.L.O.S. and the number of geography lesson types delivered by each category of geography teacher was shown in a table for chi-square analysis. The percentage distribution of geography teachers' geography teaching approaches was also made. A chi-square analysis was made to test relevant hypothesis. The percentage frequency of occurrence of the different types of geography lessons was computed for each category of teachers and for all teachers.

The degree of student participation in a geography lesson was measured by using the relative frequency of occurrence of students activities relevant to the lesson. Such frequency of participation was also tabulated and analysed graphically.

Geography lesson topics were categorized into "Matters", "Events" and "Ideas" (Akande, 1980). A percentage distribution of the three categories was tabulated.

Geography teachers were also compared in a table with regard to the usage of fieldwork types: Field Observation (F.O), Field Study (F.S); and Field Research (F.R.). Data on quality of students' responses to evaluation questions and on the quality of evaluation questions were subjected to proportion-statistical analysis. Standard error of proportion; asserted proportion, and confidence interval of population proportion were used to test relevant hypotheses based on the sample proportions at confidence levels considered appropriate.

Up-to-date data on students' performance in the school certificate geography examinations were not available in most of the schools under study. An annual percentage success in school certificate geography examination was computed for 1976, 1977, 1978, 1979, 1980, 1981 and 1982 using the available data.



With regard to literature in use, the percentage frequency of authors' patronage by all schools was tabulated. The relative patronage of Nigerian authors and the foreign authors in respect of the different aspects of geography was carefully analysed on the table.

For the various facets of data analysis the researcher depended solely on personal efforts using pocket calculator.

## CHAPTER IV

### RESULTS OF INVESTIGATION AND OTHER SIGNIFICANT FINDINGS

The main pre-occupation of this study is to find out the extent to which secondary school geography teachers, **equipped** with modern geographic ideas, make use of such modern ideas in the following facets of geography education

- (a) Geography lesson objectives.
- (b) Approaches to geography teaching.
- (c) Content of geography lessons.
- (d) Evaluation of geography learning.
- (e) The literature in use.

A preliminary investigation preparatory to this study had shown that about 98% of Nigerian geography teachers were aware of the new changes that had taken place in geography. This researcher was therefore interested in evaluating the effect of that awareness in the contexts enumerated above.

#### 4.1 Geography Lesson Objectives

It was hypothesized that the four categories of geography teachers would not differ significantly

in their formulation of geography lesson objectives.

This hypothesis was based on the assumption that since almost all geography teachers are aware of the modern geographic thought they should be conversant with the proximate goals of geography and hence of the specific objectives of geography at the classroom level. The following table summarizes the findings.

Table 4.1<sup>A</sup> TEACHERS GEOGRAPHY LESSON OBJECTIVES

| Teachers | Operational<br>Geography<br>Lesson<br>Objectives | Non-Operational<br>Geography Lesson<br>Objectives | Total | $\chi^2 = \frac{(O-E)^2}{E}$ |
|----------|--|---|-------|------------------------------|
| N.U.T    | 5(12.5)  | 31(23.5)  | 36    | 6.9                          |
| N.T.T    | 28(19.5)   | 28(36.5)  | 56    | 5.7                          |
| G.U.T    | 8(23.6)  | 60(44.4)  | 68    | 15.8                         |
| G.T.T    | 48(33.4)   | 48(62.6)  | 96    | 9.8                          |
| TOTAL    | 89   | 167   | 256   | 38.2                         |

N.B. Expected frequency (E) is in bracket.

$$E = \frac{\text{Row total} \times \text{Column total}}{\text{Grand Total}}$$

(Harper, 1965: 190)

The analysis on this table shows a chi-square ( $\chi^2$ ) value of 38.2 which is highly significant both at the 95% and 99% confidence levels. Using three degrees of freedom the chi-square values at 95% and 99% levels of confidence are 7.82 and 11.35 respectively.

The hypothesis that "the four categories of geography teachers would not differ significantly in their formulation of geography lesson objectives" was therefore rejected.

Of all the 256 geography lessons observed, only 88 or 34.4% had operational geography lesson objectives. A structural analysis of the 88 operational objectives is given in table 4.1<sup>B</sup>

Table 4.1<sup>B</sup> GEOGRAPHY LESSON OBJECTIVES CHARACTERISTICS (GLOC)

| Behaviour<br>Content<br>Condition<br>A.L.P. | Behaviour<br>Content<br>Condition | Behaviour<br>Content<br>A.L.P. | Behaviour<br>Content | Total |
|---|-----------------------------------|--------------------------------|----------------------|-------|
| 0   | 8                                 | 12                             | 68                   | 88    |

N.B. A.L.P = Acceptable level of performance.

Table 4.1<sup>C</sup> TRAINED GEOGRAPHY TEACHERS (T.G.T)  
AND UNTRAINED GEOGRAPHY TEACHERS  
(U.G.T) OBJECTIVES CHARAC-  
TERISTIC

|       | Behaviour<br>Content<br>Condition<br>A.L.P | Behaviour<br>Content<br>Condition | Behaviour<br>Content<br>A.L.P. | Behaviour<br>Content | Total | %<br>Total |
|-------|--|-----------------------------------|--------------------------------|----------------------|-------|------------|
| TGT   | 0  | 8                                 | 12                             | 56                   | 76    | 86.4       |
| UGT   | 0  | 0                                 | 0                              | 12                   | 12    | 13.6       |
| TOTAL | 0  | 8                                 | 12                             | 68                   | 88    | 100        |

#### 4.2 Approaches to Geography Teaching

It was hypothesized that the four categories of geography teachers would not differ significantly in their approaches to geography teaching; in view of the fact that what they considered new in geography would probably affect the way they teach geography.

The following analysis summarizes the true position of the situation:

Table 4.2<sup>A</sup> TEACHERS' GEOGRAPHY TEACHING APPROACHES

| Teachers | LESSON TYPES |          |          | Total | $\chi^2$              |
|----------|--------------|----------|----------|-------|-----------------------|
|          | SGL          | RGL      | CGL      |       | $\frac{(O - E)^2}{E}$ |
| NUT      | 7(11.3)      | 5(10.1)  | 24(14.6) | 36    | 10.27                 |
| NTT      | 12(17.5)     | 24(15.8) | 20(22.8) | 56    | 6.33                  |
| GUT      | 24(21.3)     | 24(19.1) | 20(27.6) | 68    | 3.69                  |
| GTT      | 36(30)       | 20(27)   | 40(39)   | 96    | 3.04                  |
| TOTAL    | 79           | 73       | 104      | 256   | 23.33                 |

N.B (a) Lesson Types:

SGL = Systematic Geography Lessons

RGL = Regional Geography Lessons

CGL = Conceptual Geography Lessons.

(b) The expected frequency value 'E'

in bracket =  $\frac{\text{Row total} \times \text{Column total}}{\text{Grand total}}$

(c) Geography lesson type is also an indication of geography lesson approach.

(d) Degree of freedom (d.f) = (C - 1) (R - 1)

where C = Column

R = Row.

With six degrees of freedom, the  $\chi^2$  of 23.33 is very significant at 99% confidence level with a value of 16.81. Consequently the hypothesis that 'the four categories of geography teachers would not differ significantly in their approaches to geography teaching was rejected.

An attempt was made to find out which of the geography lesson types was most predominant and how were the different geography lesson types distributed among the four categories of geography teachers.

Table 4.2<sup>B</sup> summarizes the findings:

Table 4.2<sup>B</sup> PERCENTAGE DISTRIBUTION OF GEOGRAPHY  
TEACHERS GEOGRAPHY TEACHING APPROACHES

| Teachers | Lesson Types |      |      | Total |
|----------|--------------|------|------|-------|
|          | %SGL         | %RGL | %CGL |       |
| NUT      | 19.4         | 13.9 | 66.7 | 100   |
| NTT      | 21.4         | 42.9 | 35.7 | 100   |
| GUT      | 35.3         | 35.3 | 29.4 | 100   |
| GTT      | 37.5         | 20.8 | 41.7 | 100   |
| % TOTAL  | 30.9         | 28.5 | 40.6 | 100   |

Note - Percentage values based on figures in

Table 4.2<sup>A</sup>.

Table 4.2<sup>B</sup> shows that 30.9% of all the geography lessons observed were systematically based; 28.5% were regionally based while 40.6% were conceptually based.

A re-categorization of geography teachers into "professional" and "non-professional" gave rise to a second hypothesis based on geography teaching approaches.

It was hypothesized that "professional or trained geography teachers and non-professional or untrained geography teachers would not differ significantly in their approaches to geography teaching".

Table 4.2<sup>C</sup> shows the position of the situation as revealed by data collected.

Table 4.2<sup>C</sup> TRAINED AND UNTRAINED TEACHERS'  
GEOGRAPHY TEACHING APPROACHES

|                 | TRS   | Lesson Types |              |              | TOTAL | $\chi^2 = \frac{(O-E)^2}{E}$ |
|-----------------|-------|--------------|--------------|--------------|-------|------------------------------|
|                 |       | S.G.L.       | R.G.L.       | C.G.L.       |       |                              |
| NTT<br>&<br>GTT | TGT   | 48<br>(47.5) | 44<br>(47.8) | 60<br>(61.8) | 152   | 0.36                         |
| NUT<br>&<br>GUT | UGT   | 31<br>(32.5) | 29<br>(29.3) | 44<br>(42.3) | 104   | 0.14                         |
|                 | TOTAL | 79           | 73           | 104          | 256   | 0.50                         |

- Note (a) Expected frequency value (E) is in bracket.  
 (b) Geography lesson type is also an indication of geography lesson approach.  
 (c) "E" value =  $\frac{\text{Row total} \times \text{Column total}}{\text{Grand total}}$



With two degrees of freedom, the statistical table gives the chi-square ( $\chi^2$ ) value of 5.99 at 95% confidence level. The derived  $\chi^2$  value of 0.50 is very insignificant. Therefore the hypothesis that "trained geography teachers and untrained geography teachers would not differ significantly in their **presentation of current ideas in geography**" was not rejected.

Table 4.2<sup>D</sup> PERCENTAGE DISTRIBUTION OF TRAINED AND UNTRAINED GEOGRAPHY TEACHERS GEOGRAPHY TEACHING APPROACHES

|                 |       | Lesson Types |        |       |        |
|-----------------|-------|--------------|--------|-------|--------|
|                 | TRS   | S.G.L.       | R.G.L. | C.G.L | %TOTAL |
| NTT<br>&<br>GTT | TGT   | 31.6         | 28.9   | 39.5  | 100    |
| NUT<br>&<br>GUT | UGT   | 29.8         | 27.9   | 42.3  | 100    |
|                 | TOTAL | 30.9         | 28.5   | 40.6  | 100    |

#### 4.3 Students' Participation in Geography Lessons

It was hypothesized that students' participation would not differ significantly in the three types of geography lessons: Systematic Geography Lessons;

Regional Geography Lessons; and Conceptual Geography Lessons. The following table (table 4.3<sup>A</sup>) shows the result of the finding.

Table 4.3<sup>A</sup> FREQUENCY OF STUDENTS' PARTICIPATION  
IN GEOGRAPHY LESSONS

| Lesson Types | Above Average Participation | Average Participation | Total | $\chi^2 = \frac{(O-E)^2}{E}$ |
|--------------|-----------------------------|-----------------------|-------|------------------------------|
| SGL          | 63(47.5)                    | 16(32.5)              | 79    | 14.12                        |
| RGL          | 45(42.8)                    | 28(29.3)              | 73    | 0.09                         |
| CGL          | 44(61.8)                    | 60(42.3)              | 104   | 12.54                        |
| TOTAL        | 152                         | 104                   | 256   | 26.74                        |

Note - 'Expected frequency value 'E' is in bracket.

There was no lesson without student participation. Participation ranged from average to above average.

Degree of freedom (D.F) = (C-1)(R-1) = (2-1)(3-1) = 1x2 = 2.

From the statistical table with d.f. of 2,  $\chi^2$  has a value of 9.21 at 99% level of confidence. The result shows a chi-square ( $\chi^2$ ) value of 26.74 which is highly significant at 99% confidence level. The hypothesis that "students' participation would not differ significantly in regional geography lessons, systematic geography lessons; and conceptual geography lessons" was rejected.

Table 4.3<sup>B</sup> QUALITY OF CONCEPTUALLY BASED GEOGRAPHY LESSONS DELIVERED BY ALL CATEGORIES OF GEOGRAPHY TEACHER

| Category of Geography Teacher | Percentage of Conceptual Geography Lessons (CGL) Delivered | Index of Quality |
|-------------------------------|--|------------------|
| G.T.T                         | 41.7   | 6.6              |
| N.T.T                         | 35.7   | 7.2              |
| G.U.T                         | 29.4   | 7.6              |
| N.U.T                         | 66.7   | 5.3              |

Note (a) The index of quality is worked out by the researcher by finding one tenth of the total percentage value of students' participation in the lessons.

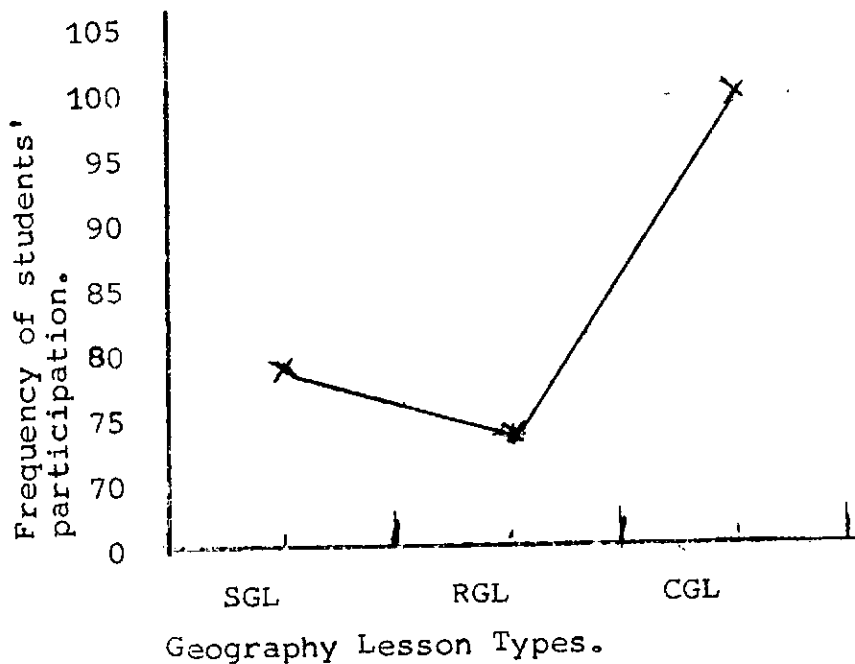
(b) It is a cardinal principle of teaching that the degree of students' participation in a lesson is indicative of the true success or failure of the lesson.

Thus Ryburn and Forge (1948) said: True teaching is nothing but arousing and directing the learning activities of the child" (Ryburn and Forge 1948:10). Children learn through active participation in a lesson. Knowledge only becomes theirs as they use

it and so make it a part of their experience of living. It is on this basis that the degree of students' participation in a lesson has been used to compute index of lesson quality.

The following graph shows students' participation curve with regard to systematic, regional, and conceptual lessons.

Fig. 3 STUDENTS' PARTICIPATION IN GEOGRAPHY LESSONS  
GRAPH



#### 4.4 Geography Lesson Evaluation and Students' Responses to Evaluation Questions

Two hypotheses were tested under this sub-heading.

- (1) The number of lower order cognitive evaluation questions would not be more than the number of higher order cognitive evaluation questions.
- (2) The proportion of the students lower order cognitive responses to both lower order and higher order geography lesson evaluation questions would not be less than 0.5.

Only 180 evaluation questions were recorded during the study. The following table (Table 4.4<sup>A</sup>) shows the distribution of the questions over the high and low levels of cognition.

Table 4.4<sup>A</sup> DISTRIBUTION OF GEOGRAPHY LESSON EVALUATION QUESTIONS OVER THE LEVELS OF COGNITIVE FUNCTIONING

|   | Level | No of Questions | P    | $\sqrt{6P}$ |
|---|-------|-----------------|------|-------------|
| Evaluation<br>Synthesis<br>Analysis       | High  | 52              | 0.29 | 0.034       |
| Application<br>Comprehension<br>Knowledge | Low   | 128             | 0.71 | 0.034       |
|   | Total | 180             | -    | -           |

$$P = \text{Proportion} = \frac{n}{N}$$

$$\sigma_P = \text{Standard error of proportion} \\ = \sqrt{\frac{Pq}{N}}$$

Where P = Proportion

$$q = (1 - P)$$

N = Total sample size.

Asserted proportion = 0.5

$$\text{i.e. } P(\text{High}) = P(\text{Low})$$

Calculated confidence interval using two standard errors of proportion = 0.43 - 0.57.

As shown by Table 4.4<sup>A</sup> each of the high cognitive proportion of 0.29 and the low cognitive proportion of 0.71 is outside the confidence interval at 95% level of confidence using two tail-test. The hypothesis that "the number of low cognitive evaluation questions would not be more than the number of high cognitive evaluation questions" is therefore rejected.

Table 4.4<sup>B</sup> DISTRIBUTION OF STUDENTS' RESPONSES  
TO GEOGRAPHY LESSON EVALUATION OVER  
THE LEVELS OF COGNITIVE FUNCTIONING

|  | Level | Frequency<br>of Students'<br>Responses | P    | $\sqrt{PQ}$ |
|--|-------|--|------|-------------|
| Evaluation<br>Synthesis<br>Analysis            | High  | 108                                    | 0.42 | 0.031       |
| Application<br>Comprehen-<br>sion<br>Knowledge | Low   | 148                                    | 0.58 | 0.031       |
|  | Total | 256                                    | -    | -           |

$$P = \text{Proportion} = \frac{n}{N}$$

$$\sqrt{PQ} = \text{Standard error of proportion} = \sqrt{\frac{Pq}{N}}$$

Where P = Proportion

$$q = (1 - P)$$

N = Total sample size.

Asserted Proportion = 0.5 (one tail test)

i.e. P(Low) not less than 0.5.

Calculated confidence interval using two standard errors of proportion = 0.44 - 0.56 with the confidence limit of 0.44.

The low cognitive proportion of 0.58 at **97½%** confidence level is not less than the confidence limit of 0.44. Consequently the hypothesis that "the proportion of the students' low cognitive responses to geography lesson evaluation questions would not be less than 0.5" is accepted.

#### 4.5 Other Findings

##### Use of Fieldwork in Geography Teaching

The degree to which the three main types of fieldwork are used by the different categories of geography teachers in geography teaching is analysed in Table 4.5<sup>A</sup> below.

Table 4.5<sup>A</sup> PERCENTAGE FREQUENCY OF USAGE OF  
FIELDWORK TYPES BY GEOGRAPHY  
TEACHERS

| TRS              | F.O. | F.S. | F.R. | %TOTAL |
|------------------|------|------|------|--------|
| NUT              | 16.7 | 16.7 | 11.1 | 14.8   |
| NTT              | 42.9 | 50.0 | 17.9 | 36.9   |
| GUT              | 38.2 | 14.7 | 11.8 | 21.6   |
| GTT              | 29.2 | 33.3 | 10.4 | 24.3   |
| AVERAGE<br>TOTAL | 31.8 | 28.7 | 12.8 | 24.4   |

FO = Field Observation (Excursion)

FS = Field Study

FR = Field Research.



### Geography Lesson Topics

A classification of lesson topics according to whether they deal directly with concrete, observable substances (matters) or with processes (events) or with concepts (ideas) was made.

Table 4.5<sup>B</sup> summarizes how the 256 geography lesson topics were distributed.

Table 4.5<sup>B</sup> CLASSIFICATION OF GEOGRAPHY  
LESSON TOPICS

| Topic Types | Total | % Total |
|-------------|-------|---------|
| Matters     | 92    | 35.9    |
| Events      | 112   | 43.8    |
| Ideas       | 52    | 20.3    |
| Total       | 256   | 100     |

Note - "Events" and "ideas" total = 164 or 64.1%  
of all the lesson topics.

### Students' Performance in School Certificate Geography Examinations

Using the available data, the following table (Table 4.5<sup>C</sup>) shows students' performance in school certificate examination from 1976-1982.

Table 4.5<sup>C</sup> STUDENTS' PERFORMANCE IN SCHOOL  
CERTIFICATE GEOGRAPHY EXAMINATIONS  
1976-1982

| Year  | No. of Entries | No. of Passes | No. of Failures | % Success |
|-------|----------------|---------------|-----------------|-----------|
| 1976  | 832            | 570           | 262             | 68.5      |
| 1977  | 701            | 375           | 326             | 53.5      |
| 1978  | 1358           | 927           | 431             | 68.3      |
| 1979  | 782            | 587           | 195             | 75.1      |
| 1980  | 1128           | 684           | 444             | 60.6      |
| 1981  | 1564           | 884           | 680             | 56.5      |
| 1982  | 1720           | 1020          | 700             | 59.3      |
| Total | 8085           | 5038          | 3038            | 62.4      |

Literature in Use

Using frequency of occurrence of each book on the various book lists collected, the frequency of authors patronage was analysed as in Table 4.5<sup>D</sup>.

Table 4.5<sup>D</sup> PERCENTAGE FREQUENCY OF AUTHORS  
PATRONAGE BY ALL SCHOOLS

| AUTHOR   | PHY<br>GEO | HUM<br>GEO | PHY<br>& HUM<br>GEO | REG<br>GEO | PRACT<br>GEO | GEN<br>GEO | %<br>TOTAL |
|----------|------------|------------|---------------------|------------|--------------|------------|------------|
| Nigerian | 0          | 0          | 30.3                | 51.9       | 27.5         | 27.3       | 32.5       |
| Foreign  | 100        | 100        | 69.7                | 48.1       | 72.5         | 72.7       | 67.5       |
| TOTAL    | 100        | 100        | 100                 | 100        | 100          | 100        | 100        |

CHAPTER V

DISCUSSION AND INTERPRETATION OF RESULT

Preamble

This is an impact study. The most conspicuous "impact indicator" is the "teacher". This is because the structure, nature and dimension of all facets of geography education are influenced tremendously if not fully determined by the teacher.

The type and quality of lesson objectives formulated for a lesson or for lessons are likely to depend to a large extent on the educational and/or professional background of the teacher. Similarly, whether he knows how to organise, integrate and present the basic subject matters of a lesson depends on the quality of his education or his professional training. Students participation in a geography lesson is tied to the opportunity for such participation offered by the teacher. Also, the quality of geography evaluation questions could be determined or influenced by the adequacy or appropriateness of the teacher's sense of direction and

how well he can relate behaviours to intentions. How well the students can make appropriate responses may also depend upon many variables, like the nature of the evaluation questions and the amount of geography learning made possible by the teacher's pedagogical moves.

Decision to use or not to use the "field" as "geography laboratory" which it is; selection of lesson topics; adoption and utilization of geography textbooks depend to a considerable extent on the whims and caprices of the teacher. Students performance in school certificate geography examinations could be affected in one way or the other by all the teacher-roles so far enumerated. What the teacher does in developing, presenting, and evaluating a lesson could be likened to the various activities involved in the phases of curriculum process.

The impact of modern geographic thought on geography education as a curricular innovation can be measured through teacher's curricular activities in which students are involved. Such activities include:

1. Formulation of lesson objectives.
2. Teaching approaches.
3. Students' participation in lessons.
4. Asking of evaluation questions.
5. Students' responses to evaluation questions.
6. Use of field activities in teaching and learning
7. Selection of lesson topics.
8. Students' performance in external examinations.
9. Adoption of textbooks.

#### 5.1 Formulation of Geography Lesson Objectives

The results of this study have shown that geography teachers differ very significantly in their formulation of geography lesson objectives. One would probably not have expected this in view of the fact that the four different categories of geography teacher had earlier shown that they were all conversant with the new developments in geography. One would have thought that the teachers' knowledge of new directions in geography would have influenced their conceptions of the proximate goals of geography and the resultant specific goals of geography lessons. However the differences in the ways geography lesson objectives are stated by geography teachers may be subject to influences other than their awareness of the new thinking in geography.

Such other influencing variables might include: teachers' attitude to work; and teachers' quality of professional training.

A lazy teacher may not bother to state his lessons objective properly. Many geography lessons had been discovered to be very badly stated or not stated at all - (Okunrotifa 1973, Okpala 1980). Lack of technical know-how resulting from inadequate professional training may also be responsible for the way geography lesson objectives are framed.

Table 4.1<sup>A</sup> shows very clearly that about 66% of what the geography teachers stated as "objectives" are not in actual fact objectives. They are aims indicating what the teachers want to do as opposed to what the students should be able to do as a result of learning. In some cases the objectives are expressed in terms that make it impossible to really evaluate relative changes in behaviour that are consequent upon effective learning.

Modern geographic ideas are action-oriented. 'Conceptualization' as the principal focus of modern geographic thought is research-based and hence action-oriented. Geography lesson objectives are therefore

expected to be operationally or behaviourally stated so that one can observe practically what geographical activities the students can or cannot perform. Table 4.1<sup>A</sup> shows that about thirty four per cent of the geography lesson objectives are operational. Both the diversity that characterizes geography lesson objective formulation and the relatively low number of operationally stated objectives do not argue in favour of any serious impact of modern geographic thought on this aspect of secondary school geography education. Besides, a structural analysis of the few operational geography objectives shows that about 77.5% of the operational objectives are only behaviour-content based (see Table 4.1<sup>B</sup>). 86.5% of the operational geography lesson objectives are formulated by professional geography teachers as shown by "GLOC" Table 4.1<sup>C</sup>. The relatively low percentage of operational objectives formulated by untrained geography teachers (UGT) could probably be due to lack of training in the principles and practice of education to which the trained geography teachers (TGT) had been exposed.

## 5.2 Approaches to Geography Teaching

The three types of geography lessons indicate the three approaches to geography teaching. Thus we have systematic geography lessons (SGL); regional geography lessons (RGL) and conceptual geography lessons (CGL) whose teaching approaches are systematic, regional and conceptual respectively. Contrary to hypothesis, the four categories of geography teachers differed very significantly in their approaches to geography teaching as shown by the analysis on Table 4.2<sup>A</sup>.

The percentage distribution of geography teachers geography teaching approaches (Table 4.2<sup>B</sup>) shows that about forty one per cent of all the geography lessons observed were conceptually based. This result looks more impressive than the Department of Education and Science (D.E.S. Survey No.19, 1974) findings which showed that eighteen per cent of all geography lessons observed in some parts of Britain were conceptually based. The department concluded that the 18% conceptually based geography lessons showed an evidence of a gradual impact of modern geographic thought on geography education in some British



secondary schools. The study in Britain was carried out about a decade ago. With the world-wide intensification of conceptual revolution in geography, within the last ten years, one would however expect a more pronounced measure of modern geographic ideas to have infiltrated into the British secondary schools.

Earlier studies in Nigeria only indicated a prevalence of traditional approaches to geography teaching. Both the systematic and regional approaches had been with geography education from time immemorial. These are traditional approaches to geography teaching. The emergence of conceptual geography lessons in our secondary schools as shown by this study could therefore be regarded as an evidence of a significant impact of new developments in geography on our secondary school geography education. This development has probably been due to the general awareness by geography teachers of the new thinking in geography. However, a more critical look at Tables 4.2<sup>B</sup>, and 4.2<sup>D</sup> reveals the fact that auxiliary teachers, particularly, the non-graduate untrained teachers (NUT) teach more of conceptually based lessons than any of the other groups of geography teachers. One

would have expected a reverse of this situation in view of the fact that the (NUT) non-graduate untrained teachers are the least qualified both academically and professionally. However, table 4.3<sup>B</sup> shows very clearly that the conceptual geography lessons delivered by the non-graduate untrained teachers (NUT) have the lowest quality index value. Perhaps the situation might be explained in terms of what one might call semantic interference in the teaching process especially when adequacy of mastery of subject matter is lacking. Sometimes inexperienced teachers, in an attempt to make themselves understood by students, resort to definitions and/or linguistic methodology.

Another interesting revelation by the study is the fact that there is no significant difference in **presentation of current ideas in geography between trained** geography teachers (TGT) and untrained geography teachers (UGT) (see Table 4.2<sup>C</sup>). This revelation contradicts Miller's idea (Miller, 1948, quoted by Hubbard and Stoddard, 1979: 188) that professional or trained geography teachers approach geography teaching more traditionally than the non-professional

or untrained geography teachers. The results of this study do not indicate in any clear way that professional training in education or lack of it determines whether a teacher would deliver a geography lesson in a traditional or modern way.

What is clear from the study is the fact that geography teaching in our secondary schools is gradually taking a new dimension. New ideas in geography are probably infiltrating into secondary school geography classrooms through the following categories of teachers:

G.T.T. with 41.7% conceptual geography lessons

N.T.T. with 35.7% conceptual geography lessons

G.U.T. with 29.4% conceptual geography lessons

N.U.T. with 66.7% conceptual geography lessons.

However, the results show that the degree holding geographers with no professional training in education teach the least number of conceptually based geography lessons. However, the quality of their conceptual lessons is the highest. This category of geography teachers are products of the universities which are more or less the watersheds of the new geographical ideas. One would have expected these new ideas to

flow out more from such graduate teachers, than from the non-graduate teachers who probably picked their conceptions of modern geographic thought from a secondary source.

### 5.3 Students' Participation in Geography Lessons

The rejection of the fourth hypothesis is not surprising. The traditional approaches to geography teaching: the systematic approach and the regional approach deal more with descriptive analysis of geographical features or places.

The teacher invariably assumes the roles of a principal actor while the students remain relatively passive recipients of geographical items of information about features and places. In a traditional geography classroom, the students in the words of Okunrotifa, (Okunrotifa, 1973) "are fed on an unstructured diet of descriptive information accompanied by elementary and often deterministic explanations".

On the contrary, what modern geography emphasizes is adequate student participation in geography teaching-learning process. Table 4.3<sup>A</sup> shows very clearly that students' overall participation

is most pronounced in the conceptually based geography lessons. This finding appears to have confirmed an earlier assertion in this report that the Nigerian secondary school geography has started to have a modern touch. Both Table 4.3<sup>A</sup> and the students' participation in geography lessons graph show clearly that students' overall participation is lowest in regional geography lessons. Even so, it is difficult to attribute this relative low participation to the fact that the lessons are regionally based. Some other teacher variables might be responsible. The type of leadership established by the teacher could be the determinant of the degree of student participation in a lesson. A teacher could play the role of an authoritarian leader; a paternalistic leader; or could maintain a sort of laissez-faire leadership. Such psychological circumstances could affect either positively or negatively the climate of the geography class of which student participation in a lesson is an integral part. However, the probable effects of teacher individual characteristics variables are not limited to any particular type of geography lesson. Thus the argument also holds for either systematic geography

lessons or conceptual geography lessons. However, the available evidence accentuates the highest degree of student participation in conceptual geography lessons.

#### 5.4 Geography Lessons Evaluation Questions

The results of this study have shown that geography lessons in the secondary schools are gradually being conceptualized. Conceptualization as earlier pointed out requires a lot of high cognitive functioning. It involves making mental pictures or maps of geographical situations; being able to explain spatial locations, spatial distributions, and spatial processes of geographical matters, events and ideas. It involves a lot of analysis, synthesis of ideas and evaluation of situations. In this circumstance one would expect geography lesson evaluation questions to be predominantly based on the high levels of cognition than on the low levels of cognition.

On the contrary, the result of the study shows a preponderance of low cognitive evaluation questions over the high cognitive evaluation questions (see Table 4.4<sup>A</sup>). Thus the fifth hypothesis that "the

number of lower order cognitive evaluation questions would not be more than the number of higher order cognitive evaluation questions" was rejected. Bakare's findings of about a decade ago showed a percentage distribution of evaluation questions over high and low levels of cognitive functioning that exhibited a more pronounced preponderance of lower order cognitive questions. (Bakare, 1969) About 93% of evaluation questions for a period of ten years (1956-1965) were based on the low level of cognition. However the evaluation questions used by Bakare were school certificate questions unlike the lesson evaluation questions used in the present study. Even so, the trends appear to be somewhat identical. About 71.1% of all lesson evaluation questions used for the present study are based on the low level of cognitive functioning. The changes that have started to take place in secondary school geography teaching do not appear to have been adequately reflected in the mode of lesson evaluation. This could be attributed to conservatism which is a major factor of resistance to curriculum change earlier analysed. Teachers tend to follow the WAEC pattern of questioning which is still predominantly in the traditional form. However, it is gratifying to note that the West African Examinations Council (WAEC) has started to embark on curriculum innovation in school certificate geography especially with regard to content and evaluation.

### 5.5 Students' Responses to Geography Lesson Evaluation Questions

The result of the study clearly shows that students' responses to evaluation questions are based more on the low level of cognition than on the high level of cognition (see Table 4.4<sup>B</sup>). The sixth hypothesis that "the proportion of the students' lower order cognitive responses to both lower order and higher order geography lesson evaluation questions would not be less than 0.5" was upheld. However, a closer look at Tables 4.4<sup>A</sup> and 4.4<sup>B</sup> would show very clearly that the dichotomy between the distribution of evaluation questions over low and high levels of cognitive functioning is more pronounced and more conspicuous than the dichotomy between the distribution of students' responses to evaluation questions over the high and low levels of cognition. For example the proportion of low cognitive evaluation questions in Table 4.4<sup>A</sup> is 0.71 while the proportion of students' low cognitive responses as in Table 4.4<sup>B</sup> is 0.58. This raises the probability that some low cognitive evaluation questions must **have been responded to by** students with high cognitive framework. This is



probably a result of a gradual increase of students' understanding of the requirements of modern geographical responses to given geographical stimuli.

Even so, one cannot underestimate the influence of the nature of evaluation questions on students' responses to such questions. For example the question "in which State of Nigeria is columbite mined"? is a knowledge-recall type of question. It does not require showing relationships, making any serious analysis, synthesis or evaluation. It is probably in this light that one should examine the frequent concern expressed by geography examiners about students responses to geography evaluation questions.

#### 5.6 Use of Fieldwork in Geography Teaching

"Conceptualization" which has been highlighted as the main symbol of modern geographic thought is only a means to an end. Like other subjects in the school curriculum, geography is playing a contributory role in making the earth environment a happy and comfortable place for man to live in. To play this role effectively, geographers have to conceptualize and scientifically study spatial problems and spatial opportunities.

Here lies the significance of fieldwork in geography education. Quantification or increased use of statistics in geography; localization of geographical studies; use of models in geography; or sociological studies in geography would be meaningless if not geared towards solving human environmental problems and understanding environmental opportunities with a view to controlling, conserving and utilizing such spatial opportunities for the benefit of man.

If one looks at Table 4.5<sup>A</sup> through this perspective, one would be inclined to say that the impact of modern geographic thought, in practical terms, has been very minimal. The table shows an overall average of 24.4 percentage adaption of fieldwork activities by geography teachers. If one compares this with the details of Table 4.2<sup>B</sup>, one is likely to see a sharp discrepancy. This discrepancy only shows that the so called "conceptual revolution" in geography has affected secondary school geographical activities within the four walls of the classroom more than it has affected "geography in the field" which is and

should be the geographers' "laboratory" or "classroom". The non-graduate untrained teachers (NUT) who, by the results of this study, teach the highest number of conceptually based lessons relative to other groups of teachers, use the least number of field activities in geography teaching. The result shows that the increased modern geographic knowledge gained in the classroom situation has not been put into adequate practical use in the "field".

#### 5.7 Geography Lesson Topics

Geography lesson topics may be classified as systematic, regional or conceptual topics. The fact that one can teach a regional topic systematically or a systematic topic adopting a regional analysis and in the process go into analysis and formulation of concepts makes this classification not very appropriate. As it has earlier been pointed out in this thesis, geography deals essentially with "place" which may be "place individual" like "Lagos" or "Abuja" or "place abstract" like the "torrid zone" or "vegetation belt". All geographical lesson topics can be viewed in the context of "place". Perhaps what is unique about any geographical lesson

topic is the fact that it could relate to an observable, tangible object; a spatial process involving specific observable, tangible objects or generalized notions about such spatial processes. Thus classification of geography topics into "matters" "events" and "ideas" appear more logical and more in conformity with the new thinking in geography which places more emphasis on "processes" or events rather than on "matters". It is the processes or events that generate ideas about the earths phenomena.

This preamble is perhaps vital to a clearer understanding of Table 4.5<sup>B</sup> It should be noted that "matters", "events" and "ideas" as in the table do not correspond in any way to the systematic, regional and conceptual lessons respectively. Rather "events", within or ideas about either a "place individual" or a "place abstract" would constitute modern lesson topics in geography.

It becomes apparent from the table therefore, that modern lesson topics (events and ideas) are more predominant than the traditional lesson topics (matters). This could be seen as another

evidence of the impact of modern geographic thought on geography education in the Nigerian secondary schools.

#### 5.8 Students' Performance in School Certificate Geography Exams.

There is no doubt that students performance in school certificate geography examinations is a measure of the quality of students' responses to geography evaluation questions. These examinations could be internal or external to the geography class. When performance in external examinations is very high, it shows that a lot of internal preparation has probably been done by both the teacher and the taught.

As shown by Table 4.5<sup>C</sup> students' performance in school certificate geography examinations within the last seven years (1976-1982) could be said to be generally above average. This is fairly encouraging if one considers the new developments taking place in the secondary schools vis-a-vis the relatively conservative nature of the West African Examinations Council (WAEC) school certificate geography programme. This is perhaps an area of secondary school geography education where the

impact of modern geographic thought is likely to be very difficult to measure until the new thinking is adequately reflected in both WAEC syllabus and its mode of evaluation.

#### 5.9 Literature in Use

It would be recalled that in the introductory preliminary investigation that preceded the present study "emphasis on local studies" as a characteristic feature of modern geography was ranked very high by all geography teachers. The effect of this is that for geography literature to be properly revolutionized in our secondary schools, geography textbooks should be predominantly home based. There should be more text-books written by Nigerian authors and with Nigerian background. The result of this study as shown by Table 4.5<sup>D</sup> shows that a large proportion of geographic literature in use is a product of foreign authors. 67.5% of the textbooks used in the schools were written by foreigners. Even majority of the few textbooks written by Nigerian authors apart from Iloeje series use illustrations that are based on distant environments even when geographical phenomena that could

be used for purposes of such illustrations are within Nigeria. The Illoeje books are very common in almost all schools. A critical look at most of the books reveals a traditional rather than a modern approach to the handling of geographical issues. The compartmentalization **that** characterized traditional geography is highly accentuated by the textbooks. From the result of this study, therefore, it is difficult to see **in** what way geographic literature in the secondary schools has been affected by the new developments in geography.

#### 5.10 Summary of Discussions

The results of this study have shown that the impact of modern geographic thought on geography education in Nigerian secondary schools could be said to have started to assume a considerable dimension in the way geography lessons are delivered in the schools. The increased conceptualization of geography lessons had accelerated considerably the rate of students participation especially in geography lessons that are conceptually based. Clearly related to the mode of geography lesson delivery is the selection of topics for geography

lessons which has also been done in a way that portrays the teachers' new conceptual framework. Apart from these three facets of secondary school geography education, effects of modern geographic thought on other facets of the programme have been very minimal. The results also show very clearly that the general awareness of the new geographical concepts and practices earlier demonstrated by the geography teachers has not been reflected in their teaching activities with relatively equal degree of uniformity. For example the teachers differed in their formulation of lesson objectives, methods of teaching; and in the use of field activities in geography education. However, one can say that the foundation of modern geography has started to be laid in the Nigerian secondary schools.



## CHAPTER VI

### CONCLUSIONS, SUGGESTIONS AND IMPLICATIONS

#### 6.1 Conclusions

The purpose of this study was to find out whether the conceptual revolution that had characterized post-secondary geography education in Nigeria has had any trickle-down effect on geography education in the secondary schools.

It is clear from the results of the study that conceptual revolution in geography has started to affect geography education in Nigerian secondary schools. 40.6% of the geography lessons observed were conceptually based. This percentage is very high compared with only eighteen percent conceptually-based geography lessons recorded by the Department of Education and Science (DES) in Britain (D.E.S.) 1974). The British Department of Education and Science (D.E.S) regarded the eighteen percent conceptual geography lessons to be a very significant measure of the impact of modern geographic thought on the British secondary school geography.

In the light of this, one can regard the relatively high percentage of conceptually based geography lessons recorded in this study as an important evidence of marked departure from tradition. This departure from tradition has been made possible by teachers general awareness of the new trends in geographic thought.

The fact that little or no marked changes have occurred in the areas of lesson objectives; textbooks evaluation questions; students' responses to evaluation questions and the use of fieldwork activities is probably due to the restrictions set by the West African Examinations Council on one hand and the limitations set by the universities on the other. The West African Examinations Council (WAEC) provides school certificate geography syllabus which is essentially systematic, regional and concentric or spiral in nature. The compartmentalization that characterised traditional geography is considerably emphasized by the syllabus. Besides, the West African Examinations Council sets the school certificate geography examination questions.

There is no doubt that he who pays the piper dictates the tune. It is therefore most likely that geography teachers' pedagogical behaviours have been considerably influenced by the laid down principles, regulations and requirements of the West African Examinations Council. It is common knowledge that the secondary school curricular programme is more or less examination-oriented as from third year. Both teachers and students who are also achievement-oriented are likely to be influenced by the demands of the West African Examinations Council.

Geography is now offered as from the third year in most secondary schools. In other words, geography is now offered in the year of "examination consciousness". All these factors are likely to influence the extent to which geography education can be conceptualized in the secondary schools.

It is true that the universities have been preaching the sermon and disseminating the doctrine of modern geographic thought through academic journals, seminars, workshops, lectures conferences, symposia and various other publications; but the fact

still remains that geography undergraduates have not been adequately involved in actual field utilization of the new knowledge to solve spatial problems and study spatial opportunities. Although, in the University of Lagos, there are some research oriented assignments in cartography, hydrology, climatology and quantitative geography. From the structure of these assignments, one can still see some measure of compartmentalization of geography.

Therefore, one can conclude that the extent to which the conceptual revolution in geography education can go in the secondary schools has been determined by the universities themselves. The relatively low percentage frequency of usage of fieldwork types by geography teachers can be blamed on the originators of the "new geographical ideas - the universities.

Consequently it can be said that the much-talked about gap between university geography and the secondary school geography is not as pronounced as we are often made to believe.

The gap is probably more pronounced between secondary schools and the West African Examinations Council, especially with regard to geography evaluation vis-a-vis the content of geography lessons.

#### 6.1.1 Limitations to the Conclusion

This researcher had the opportunity of going through the geography syllabi for Universities of Lagos, Ilorin, Ibadan and Ahmadu Bello University, Zaria. Apart from the University of Lagos, details of the various geographical activities being carried out in other universities were not investigated. The blame apportioned to the universities in the conclusion was based primarily on the researcher's personal experience and the observations made within the University of Lagos. It may well be that some of the universities engage their students in research-oriented programmes. Consequently the blame on the universities should be endorsed with caution.

Also, it is possible for the percentage value of the conceptually-based geography lessons to decrease or increase if all secondary schools in Nigeria are involved in a study like this.

## 6.2 Suggestions

It is clear from all indications that it does not look like there is any difficulty in defining what geography really is. Perhaps the only curricular issue which different scholars look at from different perspectives is the issue of the aims that should govern geography education.

Some scholars think that geography, especially the new geography, should aim at solving man's spatial problems. "The training of the mind in the understanding of the world around" is one of the cardinal objectives of Nigerian education the realization of which geography education can play a very prominent role. Some scholars sometimes narrow down the aim of geography education to an understanding of the relationship that exists between man and his physical environment. Non-geographers often write on the scope and purpose of geography from the new points of their different disciplines, thus making the confusion more pronounced. Most of the textbooks used for geography education as is evident in this study, have foreign backgrounds and consequently could not have been written to satisfy the needs and aspirations of Nigerian students.

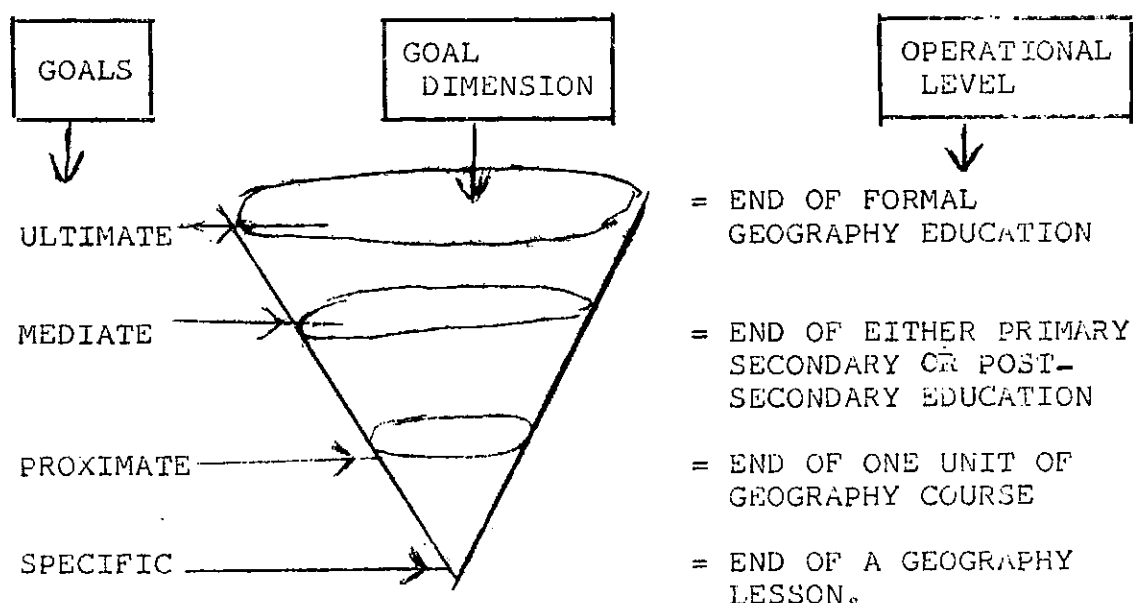
There is the need therefore to spell out in clear terms the ultimate, the mediate and the proximate goals of geography education in Nigeria.

The final or ultimate goal of geography education could be taken as the country's third educational objective - "the training of the mind in the understanding of the world around" (National Policy on Education, 1977, 1981). From this broad objective, mediate goals of geography education at various levels of our educational system (Primary, secondary, tertiary) should be derived.

The mediate goals at the different levels of education should form the basis of our proximate goals at the subject level. In other words, learning experiences or concepts in geography should be identified with definite goals.

Each definite goal should give rise to specific lesson objectives at the classroom level. The following diagrammatic model adopted from Wheeler (Wheeler, 1970) illustrates the proposal.

Fig. 4      Geography Education Goals Conic  
                 Model



Note - This model is adopted and adapted by this writer.

This type of model is likely to give geography teachers a better sense of direction and it could facilitate formulation of geography lesson objectives by the teachers. There is also an urgent need for a concept-based geography syllabus to replace the existing conglomeration of systematic, regional and concentric or spiral syllabuses which make geography look like an unbounded discipline.



If we take off from the asserted ultimate "goal of geography education" as clearly specified by the Federal Government in the National Policy on Education (1977, 1981): "the training of the mind in the understanding of the world around", the learning experiences that could ensure the realization of this goal can easily be identified, organised and integrated in a concept-based geography syllabus.

In any case, geography syllabus does not have to be too loaded or complicated as it is at the moment. "Training of the mind in the understanding of the world around" as a broad objective of geography education places emphasis on high cognitive functioning. Attitudes and skills may be regarded as by-products of such cognitive development.

"The world around", as in the asserted ultimate goal of geography education, has spatial dimensions. In other words, "the world around" is a "space" or a "place abstract". An understanding of the "space" involves an understanding of the "problems", "potentialities", and "opportunities"; that have spatial dimensions. Such problems, potentialities and opportunities are similar to what the present author

had earlier referred to as "matters, events and ideas in space" (Akande, 1980). Thus in a geographical study we would be required to look at "matters and events" in space and then generate "ideas" about the characteristics of the "space". Ideas so generated would then be used to study spatial problems and spatial opportunities with a view to offering suggestions for the solution of such spatial problems and offering advice on the conservation, control and utilization of such spatial opportunities.

Thus a geography syllabus based on this approach is likely to be very simple, straightforward and yet comprehensive. The compartmentalization that predominates the present geography syllabus would have been dispensed with. The growing rate of conceptually-based geography lessons in our secondary schools as revealed by the findings of the current study makes this suggestion very expedient.

Thirdly there is a need to overhaul the present mode of geography evaluation in Nigeria. The primary purpose of educational evaluation is to measure the effectiveness of a programme in terms of the quantity and quality of the desired or anticipated changes that have taken place in the learner.

The worth of any educational programme is invariably symbolized by the agreement between students' actual behaviours (SAB) that are consequent upon learning and students' expected behaviours (SEB) based on the learning programme. In an ideal situation the students' actual behaviour (SAB) should be equal or approximately equal to the students' expected behaviour (SEB). Where "SAB  $\neq$  SEB" as the chief examiner's report on school certificate geography examination has always shown, it means something is wrong somewhere.

The result of the present study has shown that while the schools are gradually going conceptual in their approaches to geography education the secondary school geography syllabus still maintains its traditional framework. The effect of this is that when examination questions are based on the traditional syllabus, a gap is created between the aspirations of the classroom teacher and the expectations of the examining body. The resultant situation is not likely to be conducive to effective realization of the ultimate goal of geography education especially at the secondary level of our system. Therefore,

the mode of evaluation of geography learning should reflect the new changes that are currently taking place both in the universities and in the secondary schools. The current three paper school certificate geography examination (Geography Paper 1<sup>A</sup>, Paper 1<sup>B</sup>, Paper 2) is unnecessary because apart from being too complicated, it emphasizes the deplorable dichotomy that plagued traditional geography. The terminal behaviours expected of a student who had gone through a course in geography can be measured in a straight-forward one-paper-examination based on the conceptual framework of the "current geography". The complicated nature of the school certificate geography examination has been discovered to be one of the major repelling factors that drive away students from geography (Akande, 1979: 75).

In place of the three-paper-geography examination system, a one-paper school certificate geography examination coupled with an assessment of fieldwork book is hereby recommended. In other words geography evaluation should be broken down into theoretical summative evaluation and practical formative evaluation. Summative evaluation is an evaluation

conducted at the end of a course or part of it while the formative evaluation is concerned with a continuous assessment of learning. Assessment of students' competence in practical geographical activities like map reading, could be incorporated into the two systems of evaluation.

The rationale for this is easy to explain. Modern geographic ideas emphasize the significance of high cognitive functioning which the theoretical geography evaluation would be designed to assess. Any knowledge that is not put into use is definitely not a worthwhile knowledge. Besides, the new trends in geographic education accentuate the utilitarian value of the subject. This is perhaps why some eminent Nigerian scholars have termed "modern geography" "the problem-solving geography" (Okunrotifa, 1977, Majasan, 1969). During the course of studies in school certificate geography, students would be required to study certain spatial problems and spatial potentialities. Reports of such studies would be given with relevant and appropriate cartographic and diagrammatic illustrations in the students' individual field-work-books. The

field work books would be submitted for assessment as part of the final school certificate geography examination. The geography teachers should be involved in the field work assessment exercise and both papers - theory and practice should be given equal weighting. This is because possession of knowledge could be said to be as good as the utilization of the possessed knowledge. Besides, it should be remembered that geographers are better trained than taught.

### 6.3 Implications

The findings of the present study have a lot of implications for educational theory, educational practice and educational research.

#### 6.3.1 Implications for Educational Theory

The findings have highlighted the kind of positive relationship that exists between university education and the lower forms of education in Nigeria. The findings show that the qualities of our universities are likely to influence if not determine the qualities of our secondary schools and subsequently our primary schools in many educational respects. One can therefore talk of "tertiary

educational determinism" (TED) philosophy based on the belief that educational events at the primary and secondary levels of an educational system are affected by educational events at the tertiary level of the system. The reverse is also true as the quality of the students from the primary level represents an input into the secondary level and so on up the scale.

#### 6.3.2 Implications for Educational Practice

The results of the study have indicated a need to re-appraise the present secondary school geography curriculum; the present mode of geography evaluation; the relevance and appropriateness of the existing literature in use in our schools. The need for clearly defined geography educational objectives has also been highlighted. Thus the West African Examinations Council can use the results of this study as basis for revising the school certificate geography syllabus to take advantage of the new developments in geography education. The council can also use the results as a basis for restructuring its school certificate examinations with regard to geography.

The findings also have some message for the geography curriculum experts. Formulation of new objectives for geography education; a critical review of the present high school geography curriculum in the light of both the current findings and such new objectives are important curricular activities that might be based on the facts that have been revealed by this study.

Overdependence on foreign geography textbooks by our schools is a pointer to the inadequacy of our educational independence. The results of this study can therefore make our local geographers realize the need for writing textbooks with Nigerian background.

The universities may also be influenced by the findings of this study to structure their geography educational programmes in such a way as to maximize their effects on the lower levels of our educational system.

#### 6.3.3 Implications for Educational Research

The findings have revealed other avenues for further research. For example, the study shows that non-graduate untrained teachers (NUT) delivered about 66.7%



of their geography lessons conceptually. The 29.4% conceptually-based geography lessons delivered by graduate untrained teachers are far below the value for geography teachers without any university education, that is, the non-graduate untrained teachers. Conceptual geography lessons delivered by the graduate untrained teachers (GUT) are of higher quality than those delivered by non-graduate untrained teachers (NUT). Although the present researcher had earlier suggested certain factors that might probably have been responsible for that situation, it appears there is a need for a more detailed investigation into teacher academic qualification vis-a-vis the approach to geography teaching. Also, the results of the study show that each of the four categories of geography teachers delivered a number of concept-based geography lessons. Besides, the findings show that there is no significant difference between trained geography teachers (TGT) and untrained geography teachers (UGT) with regard to approaches to geography teaching and even with regard to the types of geography lessons delivered by them. The degree of geography lesson effectiveness in respect of geography lessons delivered by

the different categories of geography teacher requires a further investigation.

The preliminary survey preparatory to this study showed a general awareness by geography teachers of the new dimensions in geography education. One would have thought that these teachers would not differ very significantly in the way they formulate their geography lesson objectives. The results of this study show a marked difference among the teachers. From the results, it becomes apparent that variables other than the observed "general awareness" might have been responsible for such significant differences. Such variables would form objects for further empirical research.

The impact of modern geographic thought on geography education in Nigerian secondary schools as indicated by the 40.6% concept-based geography lessons coupled with the general fact that conceptual revolution in geography has started to have an impact in the secondary schools should form the basis for a new investigation into the relationship, if any, between the new trend and the overall performance of the Nigerian secondary school students in the West African School Certificate geography examinations.

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A P P E N D I C E S

A P P E N D I X I

DEPARTMENT OF CURRICULUM STUDIES  
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MODERN GEOGRAPHY QUESTIONNAIRE (M.G.Q) FOR GEOGRAPHY  
TEACHERS

Below are the summaries of the features of modern geography emphasized by eminent geographers all over the world. Please react to each feature by putting and X in any of the three boxes that best represents your judgement.

Modern geography is predominantly characterized by

|                              | True                     | Doubtful                 | Untrue                   |
|------------------------------|--------------------------|--------------------------|--------------------------|
| 1. Emphasis on local studies | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Quantification            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Socialization             | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Use of Models             | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Problem-solving studies   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Conceptualization         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

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Thank you.



A P P E N D I X    II

DEPARTMENT OF CURRICULUM STUDIES  
FACULTY OF EDUCATION  
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GEOGRAPHY LESSON OBSERVATION SCHEDULE (G.L.O.S)

Kindly help to complete this questionnaire in respect of each geography lesson taught in the school. You can repeat same for as many geography lessons as you can cover so as to have a fairly satisfactory picture of the predominant characteristics of geography lessons in the school. All questionnaires completed for such lessons are needed by the researcher. Every item of information supplied would be treated confidentially.

SECTION A

THE GEOGRAPHY TEACHER'S PARTICULARS

1. Teacher's qualifications (tick those possessed)

- (a) Higher degree (M.A.; M.Sc., Ph.D)
- (b) Degree (B.A.; B.Sc.)
- (c) N.C.E.
- (d) Teachers' Grade I Certificate
- (e) Diploma in Education
- (f) School Certificate
- (g) Teachers' Grade II Certificate
- (h) Others (specify) .....

|                          |
|--------------------------|
| <input type="checkbox"/> |
| <input type="checkbox"/> |
| <input type="checkbox"/> |
| <input type="checkbox"/> |
| <input type="checkbox"/> |
| <input type="checkbox"/> |
| <input type="checkbox"/> |

2. Year of obtaining your highest qualification

- (a) Before 1960
- (b) Between 1960 and 1970
- (c) After 1970

|                          |
|--------------------------|
| <input type="checkbox"/> |
| <input type="checkbox"/> |
| <input type="checkbox"/> |

3. Area of Specialization

- (a) Geography only ☐
- (b) Geography and Education ☐
- (c) Education only ☐
- (d) Others (specify) .....

4(i) Training institution from which last qualification was obtained

- (a) University ☐
- (b) College of Education ☐
- (c) Advance Teacher's College ☐
- (d) Secondary School ☐
- (e) Vocational School ☐

(ii) Location of the institution in 4(1)

- (a) Within Nigeria ☐
- (b) Outside Nigeria ☐

SECTION B

FACTS OF EACH GEOGRAPHY LESSON TAUGHT

1. Class: .....
2. No. of geography periods per week:.....
3. Duration of each lesson in minutes:.....
4. General topic for the week:.....
5. Actual Lesson topic:.....
6. Objective(s) of the lesson in progress as stated by teacher: .....  
.....  
.....;

7(1) Lesson type: (Judged by the number of minutes spent on a particular type)

(a) A systematically based lesson

(i.e. a predominance of emphasis on locational characteristics of named features) lesson mainly on description of certain geographical feature or features.

☐

(b) A regionally based lesson

(i.e. a predominance of emphasis on the locational characteristics of one particular area) lesson mainly on description of a certain area, place or region.

☐

(c) A conceptually based lesson

(i.e. a predominance of emphasis on ideas about location that can be applied generally) Lesson mainly on geographical ideas or concepts.

☐

FREQUENCY OF STUDENT PARTICIPATION IN THE LESSON

(ii) (a) Total number of students' questions .....

(b) Total number of students' answers to teachers' questions ... ..

(c) Total number of any learning activities (apart from questioning) performed by the students during the lesson .....

Investigator's assessment of the degree of student's participation (indicate by putting an 'X' in the box that best represents your judgement.

| Very High                | High                     | Average                  | Low                      | Very Low                 |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

8(i) Lesson evaluation questions as provided by the teacher (written or oral)

.....  
 .....  
 .....  
 .....

(ii) Quality of pupils' responses (written or oral)

(a) Students' answers mainly a catalogue of geographical facts.

☐

(b) Students' answers predominantly descriptive

☐

(c) Pupils' answers mainly a relationship explanation and synthesis of geographical ideas.

☐

N.B. Put an 'X' in any one of the three boxes that best represents your judgement.

### SECTION C

#### FIELD ACTIVITIES IN GEOGRAPHY TEACHING

(Indicate the degree of students' involvement)

How often are the geography students involved in the following field-work types.

|   | Frequent-<br>ly          | Occa-<br>sionally        | Not at<br>all            |
|---|--------------------------|--------------------------|--------------------------|
| 1. Field observation (i.e. ordinary excursion involving seeing places and things through local journeys).   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Field study: (i.e. Actual geographical study of a given area or feature with a view to making a descriptive analysis of the area or features). | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

|  | Frequently               | Occasionally             | Not at all               |
|--|--------------------------|--------------------------|--------------------------|
| 3. Field Research: (ie. Scientific investigation of <del>causes</del> and/or dimensions of an observed spatial problem with a view to finding solution to it). | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

SECTION D

PERFORMANCE IN SCHOOL CERTIFICATE GEOGRAPHY EXAMINATION 1976-82

|       | No. of Entries | No. of Passes | No. of Failure |
|-------|----------------|---------------|----------------|
| 1976  |                |               |                |
| 1977  |                |               |                |
| 1978  |                |               |                |
| 1979  |                |               |                |
| 1980  |                |               |                |
| 1981  |                |               |                |
| 1982  |                |               |                |
| Total |                |               |                |

SECTION E

GEOGRAPHY TEXTBOOK(S) IN USE

.....

.....

.....

.....

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Thank you.

A P P E N D I X    III

STATISTICAL FORMULAE USED

- (a) Formula used to compute test reliability coefficient

Rank correlation 'r'

$$= 1 - \frac{6 \sum d^2}{n(n^2-1)}$$

'r' taken as coefficient of reliability,  
adjusted by the Spearman-Brown formula:

$$r_n = \frac{nr}{1+(n-1)r}$$

Where

r = original reliability

n = number times test is increased in length

$r_n$  = estimated reliability for lengthened test.

- (b) Chi-square ( $\chi^2$ ) formula =  $\frac{(O-E)^2}{E}$

Where O = Observed frequency

E = Expected frequency

$$= \frac{\text{Row total} \times \text{Column total}}{\text{Grand Total}}$$

Degree of freedom (d.f) = (C-1)(R-1)

Where C = Column

R = Row.

(c) Analysis of Proportion:

$\sigma_p$  = Standard error of Proportion

$$p = \sqrt{\frac{Pq}{N}}$$

Where P = Proportion

$$q = (1-P)$$

N = Total Sample Size.

A P P E N D I X IV

LIST OF GEOGRAPHY TEXTBOOKS IN USE

1. A new geography of West Africa by Iloeje.
2. An outline geography of West Africa by Oboli.
3. Africa by Jasper and Stembridge.
4. Certificate Physical and Human Geography  
by Adeleke and Goh Cheng Leong.
5. A geography course for secondary schools by  
Afolabi Ojo.
6. Physical geography in diagrams by Bunnett.
7. A study map book of Africa by Allan Murray.
8. A new geography of Nigeria by Iloeje.
9. Map reading handbook by Nimako.
10. Physical and human geography by Goh Chen Leong.
11. Map reading for West Africa by Nimako, D.A.
12. Elementary map reading for West Africa by  
Adeyanju, D.A.
13. Map reading for secondary schools by Udeh, G.H.
14. Practical geography in Africa by Hilton.
15. Africa by H.R. Jarret.



16. Geographical essays on Africa by Oni and Oluyeba.
17. Modern College Atlas for Africa.
18. Regional geography of Africa by Ofune.
19. Dictionary of geography by W.G. Moore.
20. Essential Guide on Map Reading by Akin Olumade.
21. Africa by G.R.E. Wicks.
22. General geography in diagrams by Bannett.
23. Map reading by Ogunseye.
24. A geography of Africa by Hornby.