

NATIONAL OPEN UNIVERSITY OF NIGERIA

SCHOOL OF EDUCATION

COURSE CODE: EDU 764

COURSE TITLE: GEOGRAPHY
METHODS

COURSE GUIDE

EDU764 GEOGRAPHY METHODS

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Published by National Open University of Nigeria

First Printed 2006

Reprinted 2013

ISBN: 978-058-687-3

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INTRODUCTION

This course consists of two modules one and two. Module one comprises units one to seven, while the second module is made up of units eight to fifteen. On the whole, the course contains fifteen units which are systematically and sequentially linked to each others for easy comprehension by the learners or readers.

Generally, the course is about the teaching of geography particularly at the secondary school level in Nigeria. It explains copiously and concisely the methods of teaching geography effectively. It also discusses the pedagogical principles for effective teaching-learning process. The importance of the local geography - fieldwork and map work in the teaching of geography are also concisely explained.

The secondary school geography curriculum, syllabus, scheme of work and lesson note preparation are discussed in details within this course.

COURSE AIMS

The course aims at providing a detailed comprehension of the nitty\gritty in the teaching of geography particular at the secondary level in Nigeria.

COURSE OBJECTIVES

At the end of this course, you should be able to explain the teaching of geography during and after the colonial era in Nigeria.

- Relate the national educational aims to objectives of teaching geography in Nigeria.
- Explain the importance of local geography, fieldwork and map work in the teaching of geography in Nigeria.
- Describe the teaching methods and skills appropriate for the effective teaching of geography.
- Explain the importance of the utilization of instructional materials in the teaching of geography.
- Discuss the development of the cognitive and affective strategies in the geography teaching.
- Explain the development and planning of the secondary school geography curriculum, syllabus, scheme of work and lesson note preparation in the teaching of geography in Nigeria.
- Describe the evaluation techniques that can be employed in the effective teaching of geography.

WORKING THROUGH THIS COURSE

You should endeavour to go through the course from the first unit to the last unit (fifteenth unit) thoroughly and painstakingly. Make sure you read and digest the units. Attempt all the activities within the course. For if you have any difficulty, you are advised to see your facilitator(s) at the study centre within your vicinity. Have tutorial discussion with your colleagues or course mates.

THE COURSE MATERIAL

The following materials will be provided for you viz: course guide and study units in two modules 1-7 and 8-15 units respectively. Moreover, the course comes with a list of recommended textbooks which may not be procured by you, but you may find them useful as supplementary materials.

STUDY UNITS

The course is divided into two modules, ONE and TWO (1-7 units) and (8-15 units) respectively.

Module 1

Unit 1	The Historical Trends of Geography Teaching in Nigeria
Unit 2	Aims and Objectives of Teaching Geography in Nigeria
Unit 3	The Nature and Scope of School Geography with the
	Geography Syllabus
Unit 4	The Development of geography Curriculum for the Senior
	Secondary School in Nigeria
Unit 5	The Planning of the Senior Secondary School One,
	Geography Curriculum

Module 2

Unit 1	Preparation of Scheme of Work and Lesson Note for
	Teaching Geography
Unit 2	The Formulation of Instructional Objectives in the
	Teaching of Geography
Unit 3	The Selection of Suitable and Appropriate Teaching
	Methods for Geography Teaching
Unit 4	Utilization of Instructional Materials in Geography
	Teaching
Unit 5	The Development of the Cognitive Strategies in the
	Teaching of Geography

Module 3

Unit 1	Geography Teaching and the Development of Affective
	Strategies
Unit 2	Fieldwork in Geography Teaching
Unit 3	Map work in the Teaching of Geography
Unit 4	General Pedagogical Principles in the Teaching Learning
	process
Unit 5	Evaluation in the Teaching of Geography

TEXTBOOKS AND REFERENCES

The following are recommend textbooks for further readings

- Federal Ministry of Education (1985). National Curriculum for Senior Secondary Schools Lagos Vol. 6.
- Mansaray, A. (1992). *Geography Method I External Studies Programmess*. Ibadan: University of Ibadan.
- Areola; et al (1992). Certificate Physical and Human Geography for Senior Secondary Schools. Ibadan: University Press Plc.
- West African Examinations Council (2006). Regulations and Syllabuses for Senior Secondary Certificate Examination (Geography Syllabus).
- National Examination Council (NECO) (2006). Regulations and Syllabus for Senior Certificate for Candidate in Nigeria (Geography Syllabus).
- Onocha, C.O. and Okpala, P.N. (1995). *Tools for Educational Research*. Benin-City: Stirling-Horden Publishers (Nig.) Ltd.

ASSESSMENT

Two components of assessment are for this course viz: The Tutor Marked Assignment (TMA) and the examination at the end of the course.

TUTOR-MARKED ASSIGNMENT

The continuous assessment component of this course is the TMA. Four of TMA will be given to you by your facilitator to answer, out of which three must be answered for assessment before you are allowed to sit for

the end of course examination. This will accounts for 30% of the total score for the course.

FINAL EXAMINATION AND GRADING

At the end of the course, you will sit for an examination which will take 70% of the total score for the course. You will be adequately informed about the examination.

SUMMARY

In this course, you have been exposed to the following topics.

- The teaching of geography in Nigeria during colonial era and post-independence era.
- The importance of local, fieldwork and map work in the teaching of geography.
- The secondary school geography curriculum syllabus, scheme of work and lesson note preparation in the teaching of geography.
- The selection of the appropriate instructional materials and teaching methods in geography teaching.
- The development of cognitive and affective strategies in the teaching of geography.
- The general pedagogical principles in the teaching-learning process.
- Evaluation techniques in the teaching of geography

We wish you successful completion of the course and even, the entire programme.

Best of luck in all your subsequent examinations.

MAIN COURSE

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MODULI	E 1	
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Unit 1 The Historical Trends of Geography Teaching in Nigeria Unit 2 Aims and Objectives of Teaching Geography in Nigeria Unit 3 The Nature and Scope of School Geography with the Geography Syllabus Unit 4 The Development of Geography Curriculum for the Senior

Secondary School in Nigeria
Unit 5 The Planning of the Senior Secondary School One

Geography Curriculum

UNIT 1 THE HISTORICAL TRENDS OF GEOGRAPHY TEACHING IN NIGERIA

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- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
 - 3.1 Geography Teaching in Nigeria during the Colonial Era
 - 3.2 The Teaching of Geography During The Post-Colonial Era in Nigeria
 - 3.2.1 Local Geography
 - 3.2.2 Fieldwork
 - 3.2.3 Map Work
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Reading

1.0 INTRODUCTION

In Nigeria, the teaching of geography in the school curriculum could be dated back to the colonial era when western education was introduced in the country. Geography as a discipline is the study of man and his environment, that is, physical, political, economic and socio-cultural

environments. However, geography teaching in Nigeria is discussed in this unit from the historical perspective and in chronological order from the colonial era when formal education was introduced to the postcolonial era and even to the present time.

2.0 OBJECTIVES

At the end of this unit, you should be able to

- describe the teaching of geography in Nigeria during the colonial era
- discuss the historical trends in the geography teaching in Nigeria during the postcolonial era to the present time
- explain the importance of local geography teaching.

3.0 MAIN CONTENT

3.1 Geography Teaching in Nigeria during the Colonial Era

The introduction of the western education in Nigeria brought in the teaching of geography in the country. The teaching of geography during this time was based merely on memorization and mainly on description.

According to Majasan (1969) the teaching of geography in Nigeria during this time was christened "Capes and Bays" geography because emphasis was on the memorization of the names of places, capes and bays of the world, population of important towns and cities among others. He opined that in fact, geography teaching only reflected the emphasis on the memorization of mountains, major capitals of the world, rivers, oceans etc without any means of the verification of the facts. Questions such as, what is the capital of Britain? Which is the longest river in the world? What is a lake? Differentiate between a lake and an island, which is the highest mountain in the world? Who discovered America? How many continents are there in the world? were asked the learners in school in geography examinations.

Moreover, what learners learnt during this time had very little relation to their own immediate environment and facts given to the learners were incoherent and disjointed. That is, they were not sequentially and logically presented to the learners, let alone being quantified. Geography teaching was therefore ill-organised, in fact it was not fully developed into a "well-recognised and respectable" discipline with carefully organised knowledge and methodology as it is today. The facts supplied then were those collected from the navigators, travelers, explorers and voyagers such as Mango Park, Americo Vespucci, Magellan, Sebastian Delcano among others.

These had circumnavigated the then "globe" and they have discovered many features both on the land, in the seas and oceans. For they discovered the longitudinal profile of River Niger in Africa from the source in the Futa Jallon Highland in West Africa through in Nigeria where it enters the Atlantic Ocean with a deltaic mouth. American continent was discovered by Americo Vespucci from where the name America was derived; while Magellan discovered the strait in South America at the extreme southern tip of South American continent which he christened "Strait of Magellan" just to immortalize his name. Delcano was the one that discovered Indian Ocean and some other features in that area that is, "Far East". The crisis in the teaching of geography was a global phenomenon then, it was not peculiar to Nigeria alone.

Furthermore, during this era in Nigeria, the geography teaching was more of western oriented curriculum because the teaching was mainly based on "determinism" and "foreign regionalism". This connotes that "geographical determinism" was based on the idea that the destiny of man was irrevocably connected with the natural environment. That is, the environment where man finds himself, determines his ways of life, in terms of political, social, religious, cultural, economic and in fact all his human endeavour. Hence, man lives in consonance with the environmental peculiarities of where he finds himself. Later geographers concentrated on the study of specific regions and the human inhabitants so as to fashion out a meaningful and organized discipline.

This period witnessed the study of Western Europe and a couple of her overseas colonies or settlements, since little or nothing was known about other parts of the world. This culminated in the study of foreign regions such as Britain, Canada, United States of America, parts of India, France, New Zealand and Australia. These were incorporated into the geography curriculum for the Nigeria students. The learners in Nigeria knew little or nothing about their own country because the geography curriculum was more outward looking than inward looking during this era.

3.2 The Teaching of Geography during the Post-Colonial Era in Nigeria

In 1960, when Nigeria was emancipated, the school subjects including geography were reviewed in consonance with the societal needs. The new school curricula reflected the needs of Nigerians in place of the colonial-oriented curricula. In fact, some subjects like Greeks and Latin were completely removed from the school system.

The teaching of geography this time was more inward inclined than outward-oriented as it was before. The teaching took into consideration the potentials, resources and immediate needs of the Nigerian learners and the people in general. It was realized in the teaching of geography during this period, that the learners must properly and comprehensively study their own local or immediate environment before being exposed to the study of the other parts of the globe; because as the aphorism states "charity begins at homes" which is in consonance with the pedagogical principle that teaching must start from known to unknown, from simple to complex and from concrete to abstract.

Based on this principle, the teaching of geography after the independence in Nigeria emphasized three relevant and related aspects - Local Geography, Fieldwork and Map work.

3.2.1 Local Geography

Local Geography can be defined as the comprehensive study of the learner's own immediate environment.

This involves the teaching of the learners about their immediate environment. It exposes the learners to the systematic studies of their local environment. The identification and proper analysis of the environment, human and non-human resources, the assessment of the environmental potentials and challenges were also achieved. Therefore, the teaching of the local environment in geography was named "Local geography" which formed the bedrock or foundation of the early training of learners in the geography teaching.

Prior to the introduction of local geography in the Nigerian schools, learners were exposed to the study of foreign environments such as Britain, Canada, U.S.A., Australia, etc. For examples, Nigerian learners could talk emphatically and copiously on the Prairie land of Canada, Pampas of Argentina, Great lakes of U.S.A., Merino sheep rearing in Australia among others, with little or no knowledge about their own local environment.

This introduction therefore laid emphasis on the following:

- (i) The description of the physical features in their locality.
- (ii) The people living in their area.
- (iii) The type of settlements and food they eat.
- (iv) The land use analysis, types of crops and soil types.
- (v) The comparisons of the resources of the area with those of other areas.
- (vi) Based on what could be found in their own immediate environment, establishing geographical principles and

- vocabulary. The following are the significance of the local geography.
- a) Pedestal academic foundation is established. Local geography inculcates in the learners such skills as critical reasoning, sound judgement, keen observation data collection techniques and analyses which are crucial in the learners' academic endeavours and in fact in other human endeavours.
- b) Learners are more exposed and familiar with their immediate environment. Learners get to have comprehensive knowledge about their immediate environment and they could relate what they have learnt to their environments outside theirs.
- c) Opportunities for employment are enhanced. Since local geography exposes learners to the political, economic and sociocultural aspects of their locality, their productivity or efficiency are enhanced and thus prepared and made versatile for the labour market.
- d) Provision for training in good citizenship. Local geography exposes the learners to problems and challenges of their immediate environment and they find solution to them because they have been able to identify these problems, hence preparing them for good citizenship and worthwhile leadership.

However, for the effective teaching of the local geography, the following approaches can be adopted.

- (i) Outdoor Approach: This involves taking learners out to see things for themselves because seeing is believing. Let them observe, feel, measure and in fact give initial analysis of what they have observed and felt. Indoor and outdoor lessons should go simultaneously, that is, side-by-side.
- (ii) Teaching should be localized in terms of the materials utilized. Make sure that local materials such as soil samples, crops, clothing, food items, paintings, photographs, rock types, etc are used elaborately in the teaching of local geography so as to make up for the outdoor activities since these may not be observed all the time.
- (iii) Learner-centred teaching should be adopted always. Always motivate and arouse your learners' interest. Let them be more active in your teaching. Be a passive teacher. Lead them to

discover things themselves. Be more empathical than sympathetical.

3.2.2 Fieldwork

This provides critical thinking, orientation in scientific observation, skills in recording, measuring and map drawing or making, which all constitute the foundation for data collection and analysis. Fieldwork will be concisely discussed in the later unit within this module.

3.2.3 Map Work

Map is the essential tool for geographers. Therefore, in the teaching of geography, map work is a "sine qua non" for the learners to study and even have a comprehensive knowledge of if the learners want to be well-bred geographers and not half-baked. It involves map reading, interpretation, elementary surveying and introduction to aerial photography at the secondary school level. This will be discussed concisely in the later unit within this module.

SELF-ASSESSMENT EXERCISE

- i. Concisely, describe the teaching of geography in Nigeria during and in the post-colonial era.
- ii. a. Define Local Geography
 - b. Explain 5 reasons why the teaching of Local Geography is very significant in Nigerian educational system.

4.0 CONCLUSION

The teaching of geography in Nigeria has passed through different historical stages viz: era of capes and bays, determinism age and post independence era. Thus, the making of geography as a well-organised and meaningful discipline culminated in the introduction of local geography, fieldwork and map work which are now the bedrocks of the modern day geography teaching.

5.0 SUMMARY

In the unit, you have acquainted yourself with the following:

(i) The teaching of geography in Nigeria during the colonial era which had been described as "capes and bays" geography.

- (ii) Post-independence era in Nigeria where geography teaching was trichotomized, thus local geography, fieldwork and map work.
- (iii) The importance of local geography in the school curriculum.
- (iv) Approaches in the teaching of local geography.

6.0 TUTOR-MARKED ASSIGNMENT

- i. "The teaching of geography in Nigeria prior to and during the early post-independence era was merely descriptive". Elucidate.
- ii. Justify the teaching of local geography in the Nigerian school system.

7.0 REFERENCES/FURTHER READING

- Majasan, J.A. (1969). New Dimensions in Nigerian High School Geography. University of Ibadan, Institute of Education.
- Gopsill, G.H. (1974). *The Training of Geography (4th Edition)*. London: Macmillan Education Ltd.
- Mansaray, A. (1992). *Geography Methods I. External Studies Programme*. Ibadan: University of Ibadan.

UNIT 2 AIMS AND OBJECTIVES OF TEACHING GEOGRAPHY IN NIGERIA

CONTENTS

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
 - 3.1 Aims
 - 3.2 Goals
 - 3.2.1 Ultimate Goal
 - 3.2.2 Mediate Goal
 - 3.2.3 Proximate Goal
 - 3.3 Specific or Instructional Objectives
 - 3.4 Educational Objectives and Functions
 - 3.5 The Objectives of Teaching Geography in Nigeria
 - 3.6 National Educational Aims and the Objectives of Teaching Geography
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Reading

1.0 INTRODUCTION

The rationality of any educational curriculum or system is a function of the clarity and specificity of its aims and objectives and how it addresses itself to discover the means, content and methods by which these objectives are to be achieved. Therefore, there is no educational curriculum without aims and objectives. Aims and objectives are intended outcomes that guide educational enterprise at different levels of the educational system during curriculum planning, development and implementation. However, in this unit, aims and objectives of geography teaching in Nigeria are concisely addressed.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- differentiate between aims and objectives
- explain various types of goals that can be formulated in education
- highlight factors to be considered while stating specific objectives in instructional process
- state the general objectives of teaching geography in Nigeria

• discuss the relationship between the national aims of education and the objectives of teaching geography.

3.0 MAIN CONTENT

3.1 Aims

These are global policy statements that reflect the philosophy and aspiration of the nation. They are long-term policy statements for achievement. Aims are broader in scope than objectives. They carry greater probability for achievement than objectives. Sometimes they are very difficult to implement and even to achieve. Aims can be categorized into a set of goals.

3.2 Goals

Goals are broad statements that guide the whole educational system. A goal is less specific and less subject to measurement that objectives. It has little precision. For instance, the attainment of permanent literacy and numeracy is the goal of primary education in Nigeria. This goal as laudable as it is has very little direction. Thus it is not useful to the classroom teacher because it does not help him to decide which teaching strategy that should be used, what mastery responses to expect and what form the evaluation of learning outcome should take. Goals have different degree of specificity. Some are more specified than others. Wheeler (1967) stated that educational goals are classified into three viz:

3.2.1 Ultimate Goal

Ultimate goal is started in broad terms and often difficult to measure or observe. It has long-term achievable period. It could be derived from aims. In fact, it is the highest outcome of the educational process.

3.2.2 Mediate Goal

Mediate goal are obtained by breaking ultimate goal into smaller components. It stipulates the behaviour that can be progressively attained at any particular stage toward the attainment of the ultimate goal.

3.2.3 Proximate Goal

Proximate goal is derived from the breaking down of the mediate goal into smaller components. It is the expected behaviour, and it is more specific though not as discrete and specific as the behavioural or specific objectives. It states the behaviour that should be demonstrated at various

stages toward the attaining of the ultimate goal. The instructional or specific or behavioural objectives are derived from the proximate goal.

3.3 Specific or Instructional Objectives

These are objectives that specified the actions to be observed or measured within a short period of time, particularly within a lesson period or instructional period. They are highly explicit, operational, time bound and quantifiable. They describe the activities that learners will be able to do so as to demonstrate their mastery of the subject matter taught by the teacher. They can also be stated in behavioural terms; thus, they are also referred to as **behavioural objectives**.

Meanwhile, when stating specific or instructional or behavioural objectives in the teaching-learning process, the following should be considered.

- (a) Action and overt verbs must be used; such as discuss, list, demonstrate, differentiate, enumerate, mention, state, highlight, compute, calculate, solve, identify, construct, tabulate, draw, recite, explain, titrate, recognize, manipulate etc.
- (b) The use of covert words must be avoided. That is, words that are not observable and measurable such as understanding, thinking, knowing, saying among others.
- (c) Avoid objectives that describe teacher's behaviour instead of learner's behaviour.
- (d) Indicate the level of acceptable performance
 For example "draw an outline map of Nigeria, on it, locate and
 name the following (i) FCT (ii) Lake Chad (iii) Confluence town
 (iv) Shiroro dam (v) Jos Plateau.
- (e) It must contain conditions under which the learner is expected to exhibit the desired behaviour or the knowledge acquired. That is, the learners may be supplied with writing material such as paper and pencil/biro pen or some apparatus are provided to manipulate.

SELF-ASSESSMENT EXERCISE 1

- i. Differentiate between aims and objectives in education.
- ii. Explain concisely the following (a) Ultimate goals, (b) Mediate goal, (c) Proximate goals.

iii. Mention 4 factors to be considered while stating objectives for instruction.

3.4 Educational Objectives and Functions

In a nutshell, educational objectives are statements that specify the kinds of behaviour to be developed in learners through the process of education. Their functions include:

- (i) Provision of direction for learners' own activities. Since the learners know where they are heading to, motivation and interest will be there to learn thus, enhancing their performance academically.
- (ii) Preparation of evaluation instruments such as tests and other forms of assessment. The stated objectives in any instruction serve as guide to the way(s) the learners will be evaluated so as to know whether or not the objectives are achieved or not.
- (iii) Provision for the classroom direction of activities. The stated objectives in the instruction serve as guidelines for the teacher's activities in the classroom situation. These assist the teacher to adopt appropriate teaching methods, techniques, and strategies.
- (iv) Selection of appropriate instructional materials. The objectives stated are guides to the selection and utilization of the instructional materials to the teacher in the classroom situation.

3.5 The Objectives of Teaching Geography in Nigeria

In Nigeria at present, the objectives of teaching geography have been conceived copiously within the context of the national aims of secondary education. That is, objectives of teaching geography have been thought of in terms of what geography can contribute to the realisation of the aims of secondary education in Nigeria. In other words, what roles the teaching of geography can play in the secondary school learners.

In Nigeria the following are the general objectives of teaching geography.

(a) To give learners a sound knowledge of their immediate environment.

- (b) To develop in learners the ability to comprehend and explain natural phenomena.
- (c) To inculcate in learners useful skills and outlooks which will enable them to make useful contribution to their community and nation at large.
- (d) To enable the learners appreciate problems of other peoples and in fact, to show empathy to them.
- (e) To develop in learners the critical thinking ability, accuracy and objectivity for proper and logical investigation.
- (f) To foster in learners a sense of responsibility toward their own society.
- (g) To develop in learners a comprehension of the spatial relationship and various features on the surface of the earth.
- (h) To enable learners comprehend the habitation of man within his environment.

3.6 National Educational Aims and the Objectives of Teaching Geography

In many nations, educational aims are formulated and achieved through the process of her education. Similarly, in Nigeria, the national policy on education stipulates the following as the national educational aims and objectives:

- (i) The inculcation of national consciousness and national unity;
- (ii) The inculcation of the right type of values and attitudes for the survival of the individual and the Nigerian society;
- (iii) The training of the mind in the understanding of the world around us; and
- (iv) The acquisition of appropriate skills, abilities and competences both mental and physical as equipment for the individual to live in and contribute to the development of his society.

The above listed national aims of education are very broad hence they serve as the ultimate goals of Nigerian educational system. However, by scanning through the aims and by scrutinizing the nature and scope of teaching geography it can be determined what geography as a subject could contribute toward the realization of these aims. In fact, it is difficult for a particular subject to satisfy all the Nigerian educational aims. Some subjects could contribute more to the realization of certain aims than other subjects.

For instance, by observing and comparing the educational aims with the objectives of teaching geography in Nigeria, the subject (geography) could subscribe to a number of the educational aims. For example, geography teaching exposes learners to know more about the immediate environment and the globe at large; appreciate their environment and even realize the need for the judicious conservation of these resources. This is akin to the second national educational aims, that is, the inculcation of the right type of values and attitude. Furthermore, through the teaching of geography, learners could acquire certain essential skills such as the art of close observation of natural phenomena, accuracy in the recording and analysis of the collected data, and logical and critical thinking.

All these skills equip the learners for meaningful contribution to the development of their society, and these are in consonance with the fourth national educational aim. Moreover, the objectives of geography teaching also prepare the learners toward the inculcation of the national consciousness and national unity which is the first the national educational aims.

SELF-ASSESSMENT EXERCISE 2

- i. Mention FOUR functions of educational objectives.
- ii. Relate the national educational aims to the objectives of geography teaching in Nigeria.

4.0 CONCLUSION

In any human endeavour, education inclusive, aims, goals and objectives are formulated to serve as direction and guide toward worthwhile realization and achievement. Meanwhile, in the Nigerian educational system, there are many subjects have geography have with their objectives of teaching them in which geography is one. Therefore, the objectives of geography teaching in Nigeria are in consonance with the realization of the national educational aims and objectives just like other subjects in the school system.

5.0 SUMMARY

In this unit, you have learned the following:

- (i) Differences between aims and objectives.
- (ii) National educational aims in Nigeria.

- (iii) Relationship between the national educational aims and the objectives of geography teaching.
- (iv) Factors to be considered when stating objectives in education.

6.0 TUTOR MARKED ASSIGNMENT

"The objectives of teaching geography in Nigeria are in consonance with the realization of the national educational aims". Justify.

7.0 REFERENCES/FURTHER READINGS

- Federal Republic of Nigeria (1981). National Policy on Education. Lagos: Federal Ministry of Information.
- Mansaray, A. (1992). *Geography Methods 1 for the External Studies Programme*. Ibadan: University of Ibadan.
- Okunrotifa, P.O. (1973). The Objectives of Geographic Education in Majasan and Adejuyigbe (eds.) Curriculum Innovation in Nigerian High School Geography. University of Ibadan, Institute of Education and Nigerian Geographical Association.

UNIT 3 THE NATURE AND SCOPE OF SCHOOL GEOGRAPHY WITH THE GEOGRAPHY SYLLABUS

CONTENTS

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
 - 3.1 The Nature of School Geography
 - 3.2 The Scope of School Geography
 - 3.3 Geography Syllabus
 - 3.4 Structure of Examination
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Reading

1.0 INTRODUCTION

In the earlier units we had discussed, and explained the historical development of the geography teaching in Nigeria, and the national educational aims, and the objectives of teaching geography. In this unit, we would treat what geography is all about, the nature and scope "wideness".

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- explain the nature of the school geography
- describe the scope of the school geography
- identify its main features in the WAEC and NECO geography syllabi or syllabuses.

3.0 MAIN CONTENT

3.1 The Nature of School Geography

The nature of any subject connotes the knowledge embedded in the subject and the way the knowledge has been synthesized. Hence, the nature of geography simply means the body of knowledge and ideas coupled with the strategies or techniques or methods employed in the acquisition of this knowledge. Furthermore, what make up the nature of

geography is also the various competencies and skills involved in the subject. Moreover, geography as a subject explains the relationship between man and his environment. That is, the influence of man's physical environment on him and man's quest to modify his physical environment in order to suit his living conditions.

If the explanation above is thoroughly x-rayed, the complexity in the nature of geography will be greatly appreciated. For instance, man within his physical environment interacts with other people thus, resulting into other features such as economic, cultural, social, political and a host of others activities are developed within the man's physical environment. All these features are now embedded in the nature of geography. In fact, the branches of geography that are being studied in the tertiary institution explain more the complexity in the nature of geography. Such branches include economic geography, agricultural geography, bio-geography, settlement geography, medical geography, climatology, geomorphology, urban and rural geography. Others are transport geography, hydrology, land surveying, physical geography, regional and human geography, aerial photography among others.

At the secondary school level, the nature of geography teaching in Nigeria is compartmentalized thus physical, human and regional, map work (map reading and interpretation). The teaching of geography at this level is centred mainly on man's interaction with his environment.

3.2 The Scope of School Geography

The scope of school geography is wide. The teacher and the learner describe as such because of the nature of geography. Geography is a *jack-of-all-trades* but masters of many since it borrows from different disciplines within the school curricula. Disciplines such as arts, humanities, sciences, social sciences, medicine and technology.

The scope of geography at the secondary school level in Nigeria will be explained at both Junior and Senior Secondary school levels. At the Junior Secondary school, social studies is taught in lieu of geography. Relevant geographical topics that are related to the immediate environment of the learners are incorporated in the subject. The social studies syllabus contains the following topics:

A. JSS 1

1. Introduction of Social Studies

Definition of Social Studies

- a. Nature of Social Studies
- b. Scope of Social Studies
- c. Objectives of Social Studies
- d. Importance of Social Studies
- e. Methods of Social Studies
- 2. Social Environment
- a. Social Environment
- b. Social Organisation
- 3. Physical Environment
- 4. Cooperation and Conflict
- 5. Institutions
- 6.1 Marriage
- 6.2 Religious
- 6.3 Health
- 6.4 Educational
- 6.5 Political
- 6.6 Economic
- 6.7 Legal
- 6. Civil Rights and Responsibilities
- 7. Culture and Identity

What is culture?

- i. Material and non-material aspect of culture Arts and Craft, Language and Culture, Music
- ii. Culture and belief

Culture and environment

Culture and change

Culture and identity

- iii Culture and integration
- iv. Aspects of our Cultural Identity
- 8. Nigerian Cultural Patterns and Their Historical Origins
- 9. Common Heritage and National Symbols

a.b.c.B.	Historical Symbols Cultural Symbols National Heroes and Heroines JSS 2	
1. 2. 3. 4.	Physical Environment Educational Institutions Leadership and Followership and Consequences Development: Societal changes over time	
a. b. c. d. e. f. g.	Spheres of Social Change in Nigeria before 1861 Socio-cultural Aspect of Changes] (1861-1960) Nationalist Movement Political Organisation between 1861-1960 Economic Development 1861-1960 Economic Development in Nigeria since 1960 Societal change and development from 1960 to present date	
5.	Science, Technology and Society	
6.	National Economic Life	
C.	JSS 3	
1. 2.	The Origin of Man Social Environment	
a. b. c.	The Community Intercommunity Relationship Social Stratification	
3.	Institutions	
a. b. c.	Political Economic Legal	
4.	Agencies and Processes of Socialisation	
5.	National Economic Life	
a.	Resources	

b.

c.

Factors of Production

Agriculture

- d. Manufacturing
- e. Mineral and Energy Resources
- f. Major Industrial Zones in Nigeria
- g. Human Resources: Population Census
- h. Migration
- 6. The World and Its People
- 7. World Transport and Communications
- 8. Nigeria and the Wider World

Topics that are related or relevant to geography.

At the senior secondary school level in Nigeria, the coverage of the content (scope) or the geography syllabus or scheme of work is broken into the physical, human, regional and practical geography. The following are the topics in both West African Examinations Council (WAEC) and National Examinations Council (NECO) Geography syllabus.

3.3 Geography Syllabus

1.0 INTRODUCTION

Geography as a subject is taught at the Senior Secondary level. The Junior Secondary Social Studies course is expected to have laid the necessary foundation. The syllabus as presented here is drawn from the National Curriculum to emphasise areas for examination purposes and does not replace the curriculum.

Man – Environment relationship is the basic concept of the study at this level and the examination is set in two parts both of which must be taken by the candidate.

2.0 OBJECTIVES

The examination will test the candidates' ability to:

- (i) Understand the concepts of differential character and the spatial relationship of the features on the earth's surface.
- (ii) Understand the concepts of man-environment relation: (i.e. to examine and explain the interaction of man within his physical and cultural environments.
- (iii) Acquire the basic knowledge of the nature and function of physical and human environments, and understanding of their inter-relationship in the resulting issues.

- (iv) Organize and formulate principles according to acquired geographical concepts and apply these principles to interpret and analyse spatial problems in the immediate and wider environments.
- (v) Develop skills and techniques for accurate, orderly and objective geographical investigations to be carried out both in the classroom and in the immediate environment.

STRUCTURE OF THE EXAMINATION

Two compulsory papers must be taken: Paper I and II

Paper I: This consists of General Geography, Elements of Practical and Physical Geography. A period of 2½ hours is allowed for the paper, consisting of two sections - A and B.

SECTION A: GENERAL GEOGRAPHY

This will be a 60 minutes multiple-choice (objective) test. It will consist of 60 questions covering all aspects or divisions of geography. All the questions are compulsory

SECTION B: ELEMENTS OF PRACTICAL AND PHYSICAL GEOGRAPHY

The paper will take 1½ hours, consisting of eight (8) questions. Candidates are expected to answer 4 of the questions for seventy (70) marks.

Question 1 will be a compulsory structured question in map reading and interpretation. Candidates will be advised not spend more than 30 minutes on this question.

Question 1: Attracts 22 marks

Others attract 16 marks each. The candidates will be expected to bring along with them to the examination hall instrument such as: graduated ruler (metric), a complete mathematical set, a piece of string/thread and a simple non-programmed calculator.

PAPER 2: HUMAN AND REGIONAL GEOGRAPHY

This is a 2 hours essay paper, consisting of three sections - A, B, and C. Candidates are expected to attempt 4 questions out of 9; picking at least one from each section. Each question carries 20 marks.

SECTION B: NIGERIA (REGIONAL GEOGRAPHY)

This section consists of 3 essays type questions. Candidates will be required to attempt any two of the questions.

SECTION C: WEST AFRICA AND AFRICA

Candidates are required to answer one out of three essay-type questions here.

]	DETAILED SYLLABUS
CONTENTS	NOTES
ELEMENTS OF	
PRACTICAL AND	
PHYSICAL	
GEOGRAPHY	
MAP WORK	Map reading and interpretation based on a contoured map of West Africa: especially Nigeria: Scale, measurement of distance, map reduction and enlargement, directions and bearings, conventional symbols, relief representation, contour representation of landforms, interpretation of topographical maps: Relationship within physical feature, relationship within cultural features, relationship between physical and cultural features, drawing of relief profiles, slope measurement and calculation, graphical representation of geographical data e.g. line graphs, bar graph, pie chart, flow chart, proportional circles, dot maps etc. Chain surveying: equipment and materials, compass traverse: equipment and materials, measurement of bearings and distances.
Elements of Physical Geography	
i. The Solar System	The earth as a planet in relation to the sun and i.e. other planets, the shape and size of the earth; Earth's rotation and revolution. Latitude, Longitude and Time.
ii. The Structure of the Earth	Internal and External Structures
iii. Rocks	Types, characteristics, formation and uses
iv. Major landform	Mountains, Plateaux, Plains; their types and
features	uses.
v. Oceans	Ocean basins, salinity, ocean currents

	(causes; types and effects) on the climates
	of coastal land
vi. Weather and Climate	Definition of weather and climate, elements of weather and climate, description and uses of basic weather instruments, keeping weather records, factors of weather and climate, importance of weather and climate, effects of climatic elements, climatic classification based on Greek and koppens methods, major climatic types.
vii. Soils	Definition, local types and characteristics.
	Factors and processes of soil formation and profile. Tropical soil types and examples of cases in Nigeria, Importance of man, effects of human activities on soil etc.
viii. Vegetation	Major types (Tropical rain forest, Cool temperate woodland, Tropical and Template grassland) characteristics, distribution factors affecting their distribution factors affecting their distribution, plant communities.
ix. Environmental	Human: Size, quality, structure and
Resources	composition of population. Atmospheric: types e.g. solar, wind and biomass, oxygen and other gasses. Water, vegetable and mineral resources.
x. External Processes	Weathering and mass movement; Definition, types and features.
xi. Internal processes of Landform Development	Earthquake, vulcanicity, other tectonic processes e.g. compressional tensional and faulting. Action of underground water.
xiii. Aspects of Environmental Interaction	Land Ecosystem, Environmental balance and interference with the natural environment.
xiv. Environmental	Soil erosion, Flooding, Drought
Hazards	encroachment, Deforestation and Pollution; Causes, Effects and Preventive Methods.
HUMAN	
GEOGRAPHY	
i. World Population	Factors of population growth, Patterns of population distribution and movement, Factors of population distribution and movement, Problems of population growth e.g. in Amazon Basin, N.E. of U.S.A., India, Japan, West Coast of South Africa

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	and West Africa.
ii. Settlement	Factors of settlement location, Rural and Urban Settlement. Patterns: Linear, scattered and dispersed and nuclear, conurbation, factors of development of each pattern. Types of functions of Rural and Urban Settlements, Rural-urban, Urban-urban, urban-rural/rural-rural interactions e.g. trading, cultural and administrative.
iii. Transportation	Types, such as road, rail, water and air. Transportation and economic development; Movement of people and commodities, national and international trades, diffusion of ideas and technology; national integration. Problems of transportation. Merits and demerits of each mode in relation to cost, speed, accessibility etc.
iv. Industry	Types, Heavy and Light Industries, Factors of Industrial Location, Contribution to Gross National Product (G.N.P.), Problems factors, major commodities (Agricultural, manufactured goods and mineral products); World Trade Routes, with special emphasis on Trade between Nigeria and the outside world.
REGIONAL GEOGRAPHY OF NIGERIA	Location, position and size of Nigeria, Political Divisions, Physical Setting, Population, Distribution of Minerals and Power Resources, Agriculture, Industry and Commerce, Transportation. Geographical regions of Nigeria. Eastern Highlands, Sokoto Plains, Chad Basin, Niger-Benue Trough, Cross River Basin and Southern Coastlands, each of these geographical regions should be treated under the following sub-headings.
REGIONAL	 i. Physical setting ii. Peoples and population ii. Settlement v. Resources and economic activities v. Transportation vi. Problems of development. Location, size, position, political divisions

GEOGRAPHY OF	and associated islands, major relief regions
AFRICA WITH	and coastline, the rift valley system,
PARTICULAR	drainage systems, climatic types and their
EMPHASIS ON WEST	characteristic, types of vegetation,
AFRICA	distribution of major minerals. Population
	distribution (emphasis on West Africa).
SELECTED TOPICS	i. Lumbering in Congo Basin.
	ii. Irrigation Agriculture in the Nile and
	Niger Basins.
	iii. Bush fallowing in West Africa
	iv. Plantation agriculture in East Africa.
	v. Fruit farming in the Mediterranean
	region.
	vi. Mineral exploitation in Africa
	(Copper, Petroleum, Gold etc.)
	vii. Major hydro-electricity power
	projects in Africa.
	viii. International Economic Cooperation
	in West Africa (ECOWAS).
FIELD PROJECT	Candidates should concentrate their
	attention on any these projects based on
	their local geographical areas (if possible a
	wide scope should be undertaken as
	permitted by financial capability of each
	school). The schools are to take full charge
	of this aspect of the syllabus as part of the
	continuous assessment. It should account
	for 25% of the total mark allocated to C.A.
	The project are:
	a. Land use
	b. Industrial activities
	c. Traffic flow
	d. Market survey
	e. Patterns of journey to work
	C D (C ' ' 1 1 1')

SELF-ASSESSMENT EXERCISE

What is the nature of the school geography? 1.

f.

Describe the scope of the geography teaching in the Nigerian 2. secondary school.

Rate of erosion in the locality etc.

- 3. Name the TWO examining bodies that conduct examination in geography for students at the senior secondary school level in Nigeria.
- 4. Examine critically, the WAEC and NECO geography syllabus.

4.0 CONCLUSION

The scope of geography teaching globally and particularly in Nigeria can be described as been eclectic in nature. That is, geography is an "interdisciplinary discipline" because it borrows its branches from other disciplines. Such disciplines include Biology – (Biogeography), Physics (Geophysics), Medicine (Medical geography), Economics – (Economic Geography), Politics – (Political Geography). Agricultural Science (Agricultural Geography), Computer Information Science (Geography Information Science) among others.

5.0 SUMMARY

In this unit, you have learnt the following:

- The eclectic nature of the scope of geography
- The scope of geography syllabus in both WAEC and NECO examinations in Nigeria.

6.0 TUTOR-MARKED ASSIGNMENT

The scope of geography is eclectic in nature. Discuss.

7.0 REFERENCES/FURTHER READING

- Mansaray, A. (1992). Geography Methods I, External Studies Programme. Ibadan: University of Ibadan.
- WAEC (2006). The West African Senior School Certificate Examination, Geography Syllabus. Yaba Lagos Nigeria.
- NECO (2006). National Examinations Council, Senior Secondary School Certificate Examination Geography Syllabus. Minna, Nigeria.
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UNIT 4 THE DEVELOPMENT OF GEOGRAPHY CURRICULUM FOR THE SENIOR SECONDARY SCHOOL IN NIGERIA

CONTENTS

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
 - 3.1 Preamble
 - 3.2 General Objectives
 - 3.3 Rationale
 - 3.4 Evaluation
 - 3.5 Recommendations for Implementation
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Reading

1.0 INTRODUCTION

This unit explains the stages in the development of the senior secondary school geography curriculum, its general objectives, rationale, evaluation and recommendations for implementation.

2.0 OBJECTIVES

At the end of this unit, you should be able to

- explain the stages in the development of the senior secondary school geography curriculum
- highlight the general objectives of the geography curriculum
- state the rationale for the development and implementation of the curriculum
- describe the ways in which the curriculum will be evaluated
- discuss the recommendations for the implementation.

3.0 MAIN CONTENT

3.1 Preamble

The National Policy on Education considers Education as an instrument for change and development. In order to make it possible for education to fulfill that fundamental role, there is the need to design, plan and implement relevant and related curricula for the school subjects in the 6-3-3-4 Educational system of Nigeria. It is that need that spurs the Nigerian Educational Research Council (NERC) — an agency of the Federal Ministry of Education — to sponsor the Senior Secondary School Geography Curriculum Planning/Writing workshop between 9th and 19th January, 1985 at the Durbar Hotel, Badagry Express Road, Lagos, Nigeria, at the instance of the Federal Government.

There has been a highly desired need for nearly two decades to produce a curriculum that would make geography education relevant, realistic and functional to the needs of the Nigerian Secondary School pupils. This Senior Secondary School Geography Curriculum Planning/Writing Workshop has, therefore, provided the right opportunity for an attempt to produce the much-needed curriculum.

The new Geography Curriculum package that has been developed for the Senior Secondary School geography programme has a lot of special features. Such features have been designed and built into the curriculum in order to make the teaching and learning of Senior Secondary School Geography a more challenging, appealing, stimulating, relevant and rewarding experience.

Among the special features of this curriculum package are the following:

- (a) The provision of a geography programme that is based on the choice of suitable and relevant themes; units, content, teaching method, students' activities, teaching aids and evaluation;
- (b) The reduction in the scope and content coverage of the subject matter of Senior Secondary School Geography, without losing the high quality required at that level. For an example, the wide scope and vagueness often associated with the existing syllabuses have been removed as much as it is considered desirable in both the physical and Human/Regional Geography. In particular, Regional Geography is now limited to the study of Nigeria and Africa with reference to West Africa, and attention focused on a comparative case study of significant issues;
- (c) The provision of a wide range of experience for students in the use of the concept-centred approach to learning, problem-solving and activity-based techniques for the acquisition of basic geographic knowledge and skills;

- (d) The inclusion of innovative elements into the syllabus, through the emphasis placed on practical geography throughout the 3-year course and the introduction of geographic principles, concepts and skills that are relevant to current trends in the discipline and useful for solving environmental problems;
- (e) The organisation of the programme around a carefully selected sequence of key ideas and concepts makes it possible to integrate the knowledge and experiences gained in the Physical, Human, Regional and the practical aspects of Geography.

3.2 General Objectives

We believe that Geography as a Senior School subject should, in accordance with the National Policy on Education (1981), help the Nigerian Senior Secondary School students to:

- (a) Understand the concepts of differential character and the spatial relationships of the surface features of the earth;
- (b) Understanding the concept of man-environment relations (i.e. to examine the life of man within his physical and cultural environments and to explain their interactions);
- (c) Appreciate and develop a sense of responsibility towards one's own society and an intelligent interest in the formulation of national goals and policies, especially as they influence the different resources and regions of the area;
- (d) Develop sympathetic understanding of the people of other lands, based upon the recognition that they may have different assemblies of resources, different goals and different problems from the people of their home area;
- (e) Organize and formulate principles according to acquired geographic concepts, which they can use to analyse and interpret spatial problems in their immediate and wider environments;
- (f) To develop skills and techniques for accurate, orderly objective geographical investigations to be carried out both in the classroom and in the immediate environment.

3.3 Rationale

Geography is versatile, expressive, creative, problem-solving, practical and intellectually stimulating school subject. The distinctive characteristics of geography i.e. central concepts, logical internal structure, methodology, integrative nature, transparent interdisciplinary effects make it an integral part of any worthwhile school curriculum. Consequently, geography should remain a core subject in the Senior Secondary School curriculum.

Any justification for a curriculum plan depends basically on the adoption of recognizable perspective. Certain belief and values emerged as basic to the thinking and intention of the Senior Secondary School Geography Curriculum Planning/Writing team. One of these is that the relationship between social studies programme in the Junior Secondary School and the Senior Secondary School Geography if any, is likely to be tenuous and superficial. There is the felt need to design the senior secondary geography curriculum as if the pupils will be coming across it as a distinct subject for the first time.

There is also the belief that the nature of geography, the values of the learners and society have their own claims to legitimate existence or influence in the curriculum. Consequently, it has been elected, from the outset, to look at the geography curriculum in its relation to the pupils, teachers, and society within the context of environmental realities. One other belief is that geography affords plenty of instances in which critical thinking, problem-solving, inductive approaches etc. can be exercised to generate pupil's interest and participation and enhance effectiveness and efficiency in teaching-learning situations.

Operationally, it is believed that irrespective of the structure of the curriculum as a whole, all the school subjects and all the substantive divisions within geography should be used as possible resources in interrelation to ensure knowledge integration, continuity, transfer-of-knowledge etc.

The Senior Secondary School Geography Curriculum Developers have elected from the outset to emphasise among others a conceptual approach. This is based on the belief that a conceptual approach to senior secondary school geography, supported by compatible problem-solving procedures and appropriate instructional resources, tempered by the good sense of an enthusiastic, resourceful and patient geography teacher, should assist the pupils to learn geography more efficiently and effectively. Thus the selection of the themes, units and content in this curriculum has been largely conceptually based and they are hierarchical with the themes being the first – order concepts. The units and content are the second – and third order concepts in that hierarchy respectively.

Furthermore, the developers also believe that apart from benefiting the learners, this curriculum plan should be responsive to community feelings, reflect official curriculum policy and discourage withdrawal among secondary school students. It should attract students of varying abilities, interest and aspirations.

There is also the belief that the pattern for the learning of geography is spiral and outward spatially in ever increasing levels of sophistication. The starting point is the locality and the exploration of geographical knowledge is to the distant, the remote, the exotic.

Finally, the provision of practical guidance to teachers of different background justified the highly structured and detailed presentation of this programme, without any intention to make it intolerably prescriptive. It is hoped that this is a worthwhile programme.

3.4 Evaluation

Evaluation has been considered and envisaged as critical at each stage of curriculum implementation process. The following proposals have been made for the evaluation of Senior Secondary School geography curriculum

- (a) There should be efforts to evaluate the whole spectrum of abilities and competencies both at convenient intervals and at the end of the programme. There should be continuous assessment and public examinations.
- (b) The spectrum of abilities, attitudes and competencies could be comprehensively assessed by the use of such techniques as objective and essay questioning, practical exercises including fieldwork, etc.
- (c) The coursework assessment should be continuous and undertaken as part of the overall examination requirement.
- (d) The continuous assessment should cover the geography course work in forms SS1, SS2 and SS3. Such assessment should constitute 30% of the overall terminal assessment. The coursework for each year should have appropriate inputs to the 30%.
- (e) Assessment of fieldwork report may be made on the basis of:
 - i. observation carried out (identification and description);

- ii. logical recording and variety of methods used in the presentation of materials;
- iii. originality;
- iv. conclusion and/or relevance to other work.
- (f) In all cases the results of the fieldwork should be presented by:
- i. maps, sketches and other means, e.g. models, and
- ii. a summary of findings in written or diagram form or both.
- (g) The fieldwork should be an integral part of the entire programme and should begin with the local geography in SS1. The topic should be on a local scale though not essentially pertaining to the local area of the school.
- (h) One of the major problems of assessing coursework is how to ensure standardization between schools and enhance credibility. It is important that the criteria for marking are carefully laid out, with separate marks specified for the required expectations.
- (i) The terminal public examination of the Senior Secondary School geography should be as follows:
 - i. it should account for 70% of the overall assessment;
 - ii. there will be two papers.

Paper One: This should consist of three sections i.e. Section A, B and C. Time recommended: 2½ hours.

Section A: Objective Questions. We recommend 60 objective questions to cover all aspect or divisions of geography. Marks recommended – 60. All the objective questions are compulsory.

Section B: Map-work. There should be one compulsory question to test map reading and interpretation. This question should consist of sub-sections to cover a fairly reasonable area on map-work programme. Mark – 20.

Section C: Physical Geography. We recommend that the pupils should answer one out of three structured questions in this section. Mark -20.

Paper Two: Human and Regional Geography. This is a two-

hour paper.

Section A: Human Geography. Pupils answer one out of three

questions here. Mark - 25.

Section B: Nigeria. Pupils answer 2 out of 4 of 5 structured

questions here. Mark - 50.

Section C: West Africa and Africa. Pupils answer 1 out of 3

questions here. Mark - 25.

3.5 Recommendations for Implementation

For the purpose of having a very successful implementation of this programme, we recommend the following:

- (a) Exposure of Geography Teachers to the new curriculum through the organisation of workshops and seminars at various strategic centres in the country before and during the first few years of implementing this curriculum. The Federal, State Ministries of Education and their agencies should provide support system to sustain the programme and monitor its progress.
- (b) Federal and State Governments should provide adequate funding to schools so that Geography as a core subject should have the basic equipment and materials that would enhance its teaching. This geography programme can be effectively taught with basic equipment and materials which necessarily call for setting up a geography laboratory in every school. The laboratory should be equipped with furniture designed for practicals and storage of materials like maps, rock specimens, models, tapes, surveying chains, prismatic compass, etc.
- (c) As a matter of great urgency, the writing of a new set of textbooks based on the new geography curriculum should be encouraged. In the meantime, an inventory of the available but suitable textbooks that could be easily purchased from the Nigerian market has been compiled and should be made available to the schools through the State Ministries of Education. In addition, copies of journals and magazines on geography and Geographical education should be made available to teachers in the schools.

- (d) Similarly, an inventory of the basic teaching aids and their sources including improvised types should be made available to schools. Most of these basic teaching aids have been identified at appropriate places in this programme.
- (e) The implementation committee for the National Policy on Education should come up quickly with a well articulated policy on the mechanisms of administering the continuous assessment of pupils. Such a policy would no doubt assist in confirming and/or modifying the suggestions on examination as given above.
- (f) Efforts have to be made by Geography Teachers to encourage an annual rise in the enrolment of students for geography at the senior secondary level through improvised methods of teaching, enthusiasm and patience.
- (g) In view of the fact that geography is a highly versatile subject allowing a variety of combinations for University based professional courses, (e.g. Architecture, Urban and Regional Planning, Estate Management, Land Surveying, Military Studies, Business Administration), its scientific orientation and the high turnover rate of the few geography teachers in school, it is our strong recommendation that geography teachers should be highly motivated by means of special remuneration.
- (h) The school timetable should be flexible to allow for at least a double period in geography for practical including fieldwork.
- (i) At least four periods a week should be devoted to the study of geography in the Senior Secondary School.
- (j) In addition to a geography laboratory, a weather station should be set up in each school. It should be equipped with at least instrument for measuring temperature, rainfall, wind and pressure. Weather observations and recordings should be a continuous exercise.

SELF-ASSESSMENT EXERCISE

- i. Describe briefly the stages in the development of the senior secondary school curriculum in Nigeria.
- ii. Mention FIVE general objectives for the development of senior secondary school geography curriculum.
- iii. Explain the ways in which the curriculum will be evaluated.

iv. State FIVE recommendations for the implementation of the curriculum.

4.0 CONCLUSION

The development of geography curriculum for the senior secondary school in Nigeria has passed through many stages. For its proper implementation, the general objectives, rationale, evaluation and recommendations for the implementation are also spelt out clearly in the curriculum development.

5.0 SUMMARY

In this unit, the following have been discussed.

- The phases in the development of the senior secondary school geography in Nigeria.
- (ii) General objectives for the development of the curriculum.
- Rationale for the curriculum development.
- Evaluation of the curriculum development.
- Recommendations for the implementation of the curriculum.

6.0 TUTOR MARKED ASSIGNMENT

Discuss the inclusion of geography as one of the core subject in the senior secondary school curriculum in Nigeria.

7.0 REFERENCES/FURTHER READING

Federal Ministry of Education (1985). National Curriculum for Senior Secondary Schools Vol. 6.

UNIT 5 THE PLANNING OF THE SENIOR SECONDARY SCHOOL ONE, GEOGRAPHY CURRICULUM

CONTENTS

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Reading

1.0 INTRODUCTION

This unit focuses on the components of the curriculum planning and development - themes, units, objectives, content, teaching methods, instructional materials and evaluation. It also explains the arrangement of the topics from the learners' immediate environment (local geography) to the other parts of the country (Nigeria).

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- mention the components of the curriculum planning and development
- distinguish between curriculum and syllabus
- criticise the arrangement of the topics within the senior secondary school one geography curriculum in Nigeria.

3.0 MAIN CONTENT

SENIOR SECONDARY SCHOOL ONE GEOGRAPHY CURRICULUM

THEM ES	UNITS	OBJECTIV ES	CONTEN T	TEACHI NG	INSTRUCTION AL	EVALUATI ON
				METHO DS	MATERIALS	
1.Local Geograp hy	1. Town/Villa ge	Learners should be able to: Recognize, locate and describe the major physical and cultural features, with special emphasis on the school in relation to other parts of the town/village, particular the town/village center.	Direction, location distance, within the town/villag e. Physical and cultural features. Functions of town/villag e;	The teacher should lead a discussion on the location, direction and distance of major physical and cultural features in the town/villag e e.g. landforms, streams, market, palace, road network etc. The learners should participate in the discussion and insert some of the major features on a blank sketch map of the town/villag e. The learners should carry out guided fieldwork on some of the major features.	Sketch maps and other pictorial illustrations of major features and activities.	The teacher should formulate questions (oral and written) to determine the extent to which the learners are able to recognize, locate and describe the major physical and cultural features in the town/village. Careful observation and assessment of learners' participation in fieldwork. Teacher should also assess diagrammatic illustrations.
	2. The town/villag e and its surroundin g	Learners should be able to: Identity, describe and analyse the various types and forms of physical and cultural	Physical and cultural features as they influence human activities e.g. mining,	Discussion and problem solving methods etc. Learners should participate are	Specimen, photographs, a sketch maps showing major flows of interactions.	Use objective questions to test the pupil's understanding of the interactions between the town and its surroundings. Observation of

interaction	farming,	resource	pupil's
between the	fishing,	persons in	Participation.
town and its	lumbering,	the	r ur ur up uu o m
surrounding.	carving,	discussion	
	pottery,	by:	
		a) describi	
	works and	ng the	
	transportati	routes	
	on etc.	from	
		their	
		homes	
		to the	
		school.	
		b) Describ	
		ing	
		various	
		product	
		s of	
		human	
		activitie	
		s s in	
		the	
		town/vil	
		lage	
		and its	
		surroun	
		dings.	

THEM ES	UNITS	OBJECTIV ES	CONTENT	TEACHIN G METHOD S	INSTRUCTIO NAL MATERIALS	EVALUATI ON
	3. The Local Governm ent Area in relation to other parts of the states	Learners should be able to: a) Identif y the locatio nal relatio nship of the local gover nment area to other parts of the state. b) Descri be the major physic al and human featur es of the state.	Local government area, capital, locational relationship, physical characteristics, peoples, transport network, economic activities etc.	Discussions, problem solving and assignment methods. Learners should insert physical and cultural features on outline maps.	Atlas maps, overlays, photographs, diagrams, films and pamphlet from state ministry of information etc. where available.	Formulate questions to determine the learners' understandin g of the local government area and state. Use objective questions to revise and test the learners' understandin g of local geography. use the feedback from evaluation to decide any aspects of local
II The	1. The	Learners	The Earth, the	Discussion	Models diagrams	Use objective
Solar	earth and	should be	Sun and other	and the use	and sketches,	question to
System	other	able to:	planets,	of questions intermittentl	pictures and	test the
	planets.	a) Define the solar system	galaxies, and the universe.	v. Learners	slides, globe.	learners' understandin
		by	Distance of	should		g of the solar
		enumerating	the earth from	manipulate		system.
		its various	the sun, the	models and		system.
		components;	sun as a source	other		

	b) Describe the position of the earth and other planets in relation to the sun.	of energy to the earth.	illustration to demonstrate their understandi ng and application of the acquired knowledge of the solar system.		
2. The shape and size of the earth	Learners should be able to: a) Describe and prove the shape of the earth. b) State the diameter and circumferenc e of the earth	Shape of the earth, horizon, geoid and circumnavigati on.	Discussion and demonstrati on. Learners should observe the globe participate in the demonstrati on, ask and answer questions.	The globe, models, photographs, satellite photographs and sketches.	Oral and/or written questions to test learners' understandin g of the proofs of the earth shape.
3. Earth- rotation and revolution	Learners should be able to: a) Define the concepts of rotation and revolution; b) Describe the phenomena of the earth rotation and revolution; c) Enumerate and describe the effects of earths rotation and revolution.	Rotation, revolution, axis, plane, equinoxes, hemisphere, solstice, day and night season.	Demonstrati on of the rotation and revolution of the earth. Students should explain the causes of day and night, season etc.	The globe, stationary source of light e.g. torchlight, candle, etc. darkroom, diagrams.	Questions to test learners understandin g of the differences between earth rotation and revolution and their effects to compute accurately angles of tilt, path and directions of the earth movement.

THEM ES	UNITS	OBJECTIV ES	CONTENT	TEACHIN G METHOD S	INSTRUCTIO NAL MATERIALS	EVALUATI ON
	4. Latitude and longitude	Learners should be able to: a) Define and recogniz e latitude and longitud e; b) Use latitude and longitude e in the descripti	Latitude – Equator, Tropic of Cancer, tropic of Capricorn, Arctic circle, Antarctic circle, Angular distance Longitude – Meridians, Greenwich mean time,	Problem solving and discussion methods. The learners should calculate time, time zones and distances.	Atlases, the Globe and illustrative diagrams.	Written questions on the calculation of time and time zones. Exercises to determine differences between latitude and longitude and the location of places.

III The outer zones of the earth	The outer zones of the earth	on of the position of a place; c) Relate longitude to time; d) Relate latitude to distance. Learners should be able to describe the major outer zones of the earth in relation to man's activities.	International Dateline Grid references and location of places. Atmosphere , hydrospher e, biosphere and lithosphere	Discussion based on diagrams and sketches.	Diagram, sketches, atlases etc.	Formulate questions to the learners understandin g of the outer zones of the earth.
IV The nature of the Earth Interior	Interior of the Earth	Learners should be able to describe the internal layers of the earth using a well labeled diagram.	Crust, mantle, core, sial and sima rocks.	Discuss with the aid of guiding questions and illustration s. Learners participate in the discussion and draw the cross- section of the earth's interior.	Diagram, sketches, models of the cross sections of the earth's interior	Ask questions to test learners' understandin g using an unlabelled cross-section of the earth's interior.
V Rocks	1. Types and characterist ics of rocks.	Learners should be able to: a) Recognize the three major types of rocks; b) Describe the major characteristi cs of the three types of rocks by giving such attributes as texture, structure, colour, and permeabilit y.	Types: Igneous rocks, metamorphi c rocks, sedimentary rocks, characteristi cs: texture, structure, colour	Discussion and fieldwork. Learners will explore their immediate environme nt To identify types of rocks. Use of resource persons and resource centres should be encourage d. Collection and examinati on of rock specimen by	Specimen of rocks, diagrams, sketches, photographs, etc.	Provide questions to test learners' ability to identify the various rock types and describe their physical characteristic s.

			students.		
2. Mode of formation	Learners should be able to describe the processes of rock formation	Intrusion and extrusion. Sedimentati on and metamorphi sm.	Discussion to centre on each process and its resultant effects on the characterist	Diagrams and sketches etc.	Formulate essay and objective questions to test pupil's understanding of the processes of
			ics of each rock type.		rock formation.

THEME	UNITS	OBJECTIV	CONTENT	TEACHIN	INSTRUCTION	EVALUATI
S		ES		G METHOD S	AL MATERIALS	ON
	3. Uses of rocks.	Learners should be able to: recall and describe at least five uses of rocks.	Minerals, tourism, constructions (roads and bridges, houses) etc.	Guided discussion to recall information on uses of rocks, assignment method.	Diagrams and sketches, pictures, specimens etc.	Use questions to test learners ability to recall and describe uses of rocks.
VI Major landform features	1. Mountai ns Types and Uses	Learners should be able to: a) Identify and describe the four major types of mountain s. b) Enumerat e the uses and disadvant ages of mountain s.	Types: Fold mountain, block mountain, residual mountain, volcanic mountain. Uses and effects: Minerals, timber, H.E.P. tourism, communicati on barrier, climatic effects etc.	Discussion, discovery and observation methods. Learners should participate in the discussion and give examples in Nigeria and elsewhere. Table cloth for demonstrati on fold mountain.	Models, block diagrams, sketches, photographs, maps etc. Give examples in Nigeria and elsewhere. Tables cloth for demonstrating fold mountain.	Formulate both objective and essay questions to test learners' understanding. Observe learners' practical demonstration of the shape or form of each type of mountain using models, paper, table, cloth etc.
	2. Plateaux - Types and Uses.	Learners should be able to: a) Identify and describe the major types of plateau and their character istics. b) Enumerate the uses of plateaux	Types: Tectonic, intermont, lava or volcanic plateau, dissected plateau etc. Uses and Effects Minerals, tourism, settlement, specialized farming practice etc.	Discussion, discovery and observation methods. Learners should participate in the discussion and give examples in Nigeria and elsewhere. Learners should compare the diagrams or models of a mountain	Model, block diagrams, sketches, photographs, maps, etc.	Use objective questions to test learners' understanding of the types, characteristics and uses of plateaux.

3. Plains - Types should be able to and Uses able to a) Identify outwash plain, outwash plain, alluvial plain and their characteristi cs. b) List the uses of plains 3. Plains - Types: Coastal plain, outwash plain, alluvial plain, de plain highland plain. Uses - Effects - Agricultu Minerals, Settlemen etc.	participate in the discussion and and give examples in Ire, Nigeria and elsewhere.
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THEME S	UNITS	OBJECTIV ES	CONTENT	TEACHIN G METHOD S	INSTRUCTION AL MATERIALS	EVALUATI ON
	4. Oceans Basins	Learners should be able to: a) Identify and describe the major parts of the ocean basin. b) List the uses of oceans.	Continental shelf, continental slope, ridge, deep, trenches, Uses — transportatio n, fishing, mineral etc.	Discussion and picture study.	Diagrams, sketches, photographs, specimens, atlases and world wall maps.	Ask learners to name unlabelled diagrams of ocean basins and describe the uses of the oceans.
VII Weather and Climate	1. Definition s of weather and climate and their difference s.	Learners should be able to: Define the concepts of weather and climate by giving the attributes of each and showing the differences between the two.	Variability, areal extent, duration etc.	Weather observation , discussion and assignment methods. Problem-solving should be encouraged . Learners should participate in discussion and observation s.	Diagrams, sketches photographs, specimens, atlases and world wall maps.	Oral questions to recall ideas and experiences about local weather.
	2. Elements of climate	Learners should be able to: a) Enumerate the major elements of climate and describe the relationship among them. b)	Temperature , wind, humidity, pressure, precipitation , cloud, sunshine etc. Thermomete r, Stevenson's screen, rain gauge,	Discussion and observation methods. Emphasise learners' activities – measuring, recording data. Learners also draw graphs to	All the instruments used in studying weather and deriving climatic data.	Evaluate this units by careful observation and assessment of learners contributions and participation during class oral presentation

		111		1
	umerate shadow,	illustrate		and practical
	d identify stick,	data so		observation.
	different weather	collected.		
	struments cock,			
use		r		
	easuring .			
we	ather			
	ements.			
(c)	Use the			
	propriate			
	truments			
in	producing			
and	d			
rec	cording			
dat	ta on each			
ele	ement.			
3. Some Lear	rners Elements o	of Discussion,	Diagrams,	Observation
elements show		 observation 	sketches etc.	and
of local able		,	Simple graphs to	assessment of
weather desc	cribe and sunshine,	assignment,	illustrate data	learners'
illus	strate temperature	, problem	collected.	participation
som	ne of the humidity	solving		in discussion
basi	ic and wind	techniques		and drawing
elen	nents of	using		of illustrative
wea	ther.	simulation		diagrams and
		and games.		graphs.
4. Factors Lear	rners Altitude,	Discussion	Diagrams	Use multiple
affecting show	uld be Latitude,	and	sketches and	and
climate able	to: slope, ocean	n assignment	maps.	completion
enur	merate current,	methods,	=	types of
and	describe cloud cover	r, learners		objective
the	factors distance	should take		questions test
affe	ecting from ocean	n, part in the		learners
clim	nate. wind,	discussion,		understanding.
	distribution	refer to		
	of land and	d their maps		
	san ata	for place		
	sea etc.	101 place		
	sea etc.	locations		

THEM ES	UNITS	OBJECTIV ES	CONTEN T	TEACHIN G METHOD S	INSTRUCTION AL MATERIALS	EVALUATI ON
	5. The importance of climate and weather	Learners should be able to: realize, appreciate and enumerate the major effects of climate and weather physical features and human activities.	Effects on health, agriculture, clothing, building types, constructio n time; occupation; food storage; soil formation etc.	Discussion method. Learners should take some well guided local field trips.	Photographs, practical illustration.	Assess learners' understanding and application of the effect by administering oral and written questions.
	6. Keeping weather records.	Learners should be able to: (a) Keep daily records of local weather in individua	Types of weather records Temperatur e, Rainfall, Wind direction, Humidity etc.	Activity Methods. Learners have to measure rainfall, record temperature, measure pressure,	Rain-gauge; barometer, thermometer, hygrometer, wind-vane, anemometer etc.	The assessment of these units has to be on a continuous basis; because it should be encouraged throughout the course.

	I	1 1 1		-1		
		l book and the class weather charts; (b) Prepare maps and charts on the various weather data so collected.		observe the direction of wind etc. Learners have to keep the weather recording sheet using conventiona l symbols. Learners have to plot graphs etc. based on the weather data.		
VIII. Soil and Vegetati on	1. Soils – Definition, local types and characteristi cs.	Learners should be able to: a) Define soils; b) Identify and describe the major local types by giving their characteristic s e.g. depth, textures, composition permeability, colour, etc.	What are soils? Soil types Sandy soil, Loamy soil, and Clayey soil etc.	Discussion, observation, assignment methods. Learners should collect specimens of soils, observe them and describe their characteristics: Encourage field observations	Specimens of soils, photographs, diagrams and sketches, atlases etc.	Formulate questions to test learners' understanding and application of the meaning, type and characteristics of soils.
	2. Vegetation and the factors affecting its developmen t and distribution	Learners should be able to: a) Define the concept of vegetation, and b) Explain the major factors affecting its development and distribution.	What is vegetation? Factors: 1. Climatic factors (particular ly temperatur e, humidity, precipitati on, light intensity and wind); 2.Edaphic factors (those related to the soil); Geomorph ic factors (those related to landforms); 3.Biotic factors (those related to living organisms) etc.	Discussion method in which learners should participate effectively. They should relate this to the experiments on factors of germination in integrated science and local experiences. Guided discussion on the relationship between soils and vegetation.	Diagram sketches, photographs, field specimens.	Ask questions to ascertain the learners' understanding and application of the concept of vegetation and the factors affecting its development and distribution

THEME S	UNITS	OBJECTIV ES	CONTEN T	TEACHIN G METHOD S	INSTRUCTION AL MATERIALS	EVALUATI ON
	3. Local vegetation types.	Learners should be able to: a) Identify the major local vegetation types and their plant varieties. b) Describe the major characteristic of each vegetation, types, with special reference to Nigeria; c) Relate vegetation types to climatic patterns.	Mangrove, rain-forest, Guinea Savanna, Sudan Savanna, Sahel, Savanna, montane type, derived vegetation .	Observation, discussion, assignment methods, use of resources persons including learners how have relevant information.	Specimens, photographs, sketches, diagrams etc.	Use questions to test learners' understanding of the local vegetation types, their plant varieties and characteristics.
	1. Human Resources	Learners should be able to: a) Appreciate the importance of human resources; b) Relate minerals, vegetation, atmospheric and water resources to the use of man.	Size, quality, structure, compositi on of population .	Discussion on such issues as size (in terms of number), quality (in terms of education and health); structure (in terms of sex and age ratio), etc. Learners should discuss these in the context of source of labour; defence; developme nt, productivit y etc. Create adequate forms for problem solving activities.	Diagrams, sketches; graphs on simple population data, photographs etc.	Evaluation by giving essay questions to test learners' understanding of environmental resources and their relationship to human development.
	2. Atmospher ic resources	Learners should be able to a) Identify and describe the major types of atmospheric resources;	Types – Solar energy; wind energy, Biomass energy. Oxygen and other	Discussions and problem solving techniques. Learners should participate in the	Diagrams sketch maps.	The teacher should ask the learners to mention the types of atmospheric resources and discuss their various uses.

b) Enumerate	gases,	discussion	
their uses.	rain, etc.	and give	
	Uses:	local and	
	Power	other	
	supply,	examples.	
	life	Learners	
	sustenance	should	
	e.g.	identify the	
	breathing	various	
	by man	atmospheri	
	and	c resources,	
	animals,	and discuss	
	water by	their uses,	
	man and		
	animals.		

THEMES	UNITS	OBJECTI	CONTENT	TEACHI	INSTRUCTI	EVALUATI
		VES		NG METHOD	ONAL MATERIALS	ON
				S	WATERIALS	
	3. Water resources	Learners should be able to: a) Enumerate the various types of water bodies and associated resources; b) Explain their uses and; c) Give some examples in Nigeria and elsewhere.	Various types of water bodies, e.g. oceans, lakes, rivers, streams, springs, water wells, water resources e.g. waterfall, fishes and other water animals and plants. Uses — tourism, games hydroelectric power, dam for irrigation, industrial and domestic purposes, transportation	Discussion , problem solving techniques; learners should participate in the discussion and give local examples elsewhere. Learners should locate the various water bodies in the locality and discuss their uses.	Diagrams, sketches, map etc.	To evaluate, the teacher asks the learners to mention types of water resources, explain their uses and give examples.
	4. Vegetatio n resources.	Learners should be able to: Identify and describe the types of uses of major vegetation resources.	etc. Types of vegetation resources: Timber, roots, leaves, barks, latex, fibres, firewood, fruits, etc. Uses: food, medicine, firewood, canopy, clothing, tourism, game reserve, fuel housing, furniture etc.	Discussion , observatio n and assignment method. Learners should participate in the discussion as resource persons, especially when discussing the uses of vegetation resources.	Specimens, photographs, diagrams and sketches.	Use questions to find out if the learners understand types and uses of vegetation resources.
IX. Environm ental resources.	5. Mineral resource s	Learners should be able to: Identify name and	1. Minerals fuels for power e.g. coal, petroleum	Discussion and observatio n methods. Learners	Specimens, photographs , diagrams, sketches, maps.	Ascertain the extent to which learners can

		describe the major types of mineral resources and their importanc e to man.	and natural gas. 2. Iron and nonferrous metals e.g. iron ore, copper, tin, aluminum, lead and zinc. 3. Ferroalloy metals e.g. manganese, chromium, cobalt etc. 4. Other metallic minerals; e.g. gold, silver platinum etc. 5. Some unusual metals e.g. mercury, chromium, radium, platinum, uranium etc. 6. Other industrial minerals: e.g. graphite,	should be made to use their experience s including the relevant lessons in chemistry or integrated science. Learners should give examples in Nigeria where possible.		recognize and discuss the major mineral resources. Learners should draw maps to show the location of various minerals in Nigeria.
THEMES	UNITS	OBJECTI VES	phyrites, etc. CONTENT	TEACHI NG METHO DS	INSTRUCTIO NAL MATERIALS	EVALUATI ON
X. Nigeria	1. Location, position and size of Nigeria.	Learners should be able to: a) Describe the location of Nigeria by giving the latitudes and longitudes.	Location (latitude and longitude); Position (boundari es and neighbour ing countries); size (distance from South to North West to East and area: size in relation to West Africa and Africa	Discussion , finding out — technique of teaching and assignmen t method, simulation and game. Learners will develop a political map of Nigeria and locate the state capitals.	Political map of Nigeria diagrams and sketches.	The unit will be evaluated by asking the students to draw their individual political maps of Nigeria for teachers' assessment etc.

		etc). 4. Political divisions. States and their capitals as well as the Federal Capital Territory) etc.			
2. Physical setting of Nigeria	Pupil should be able to: a) Identif y and descri be the major relief and draina ge system s; b) Descri be and accou nt for the two major season s in Nigeri a; c) Locate and descri be the vegeta tion belts in Nigeri	Relief (low-lands and high-lands), drainage (major rivers). Climate (the two major seasons); the Tropical maritime and Tropical Continental air masses. Major vegetation belts in Nigeria.	Discussion method: Learners will be guided to draw maps and locate major physical features.	Sketches, diagrams, physical map of Nigeria. Models, simulation and games should be used to generate problem-solving issues.	Test learners' understan ding by asking them to fill or supply required informatio n on physical setting of Nigeria on blank map.
3. Populatio n	a. Learners should be able to: a) Descri be the pattern of popula tion distrib ution in Nigeri a; b) Accou nt for the variati on in the distrib ution	Population – size, distribution, structure, density.	Guided discussion. Learners should identify areas of high, medium and low population densities on a map. Learners should develop maps of population distribution	Outline maps, population maps.	Test learners' understandin g through questions and labeling of blank maps.

		pattern				
	4. Distributi on of Mineral and power resources.	Learners should be able to: a) Enum erate and locate the variou s minera ls and source s of power; b) Descri be the proces ses of extract ion of petrole um, coal and tin	Minerals — Petroleum, gas, coal, gold, iron, limestone/m arble, tin, ore, salt, columbite, etc. Power — Petroleum, etc. Processes — Oil field, Drilling. Refineries, pumping stating, opencast, underground mining, adrit mining.	Questionin g and discussion methods. Assignment . Fieldwork on a local mining area, map filling.	Specimens, economic map pf Nigeria etc.	Use Quiz. The teacher marks individual/gr oup reports.
THEMES	UNITS	OBJECTI VES	CONTENT	TEACHIN G METHOD	INSTRUCTIO NAL MATERIALS	EVALUATI ON
	5. Agricultur e in Nigeria	Learners should be able to: a) Descri be the main types of agricul ture in Nigeri a. b) Explai n its import ance c) Enume rate factors influen cing agricul ture. d) Discus s proble ms of agricul ture; e) Mentio n at least five solutio ns to the proble ms.	Factors: Physical and Human Types — Subsistence agriculture; mechanized agriculture; pastoral farming, crop rotation etc. problems: production, preservation, distribution, rural depopulation. Possible solutions — Incentives to farmers, improved management of water cooperative farmers, improved transportation soil study.	Guided discussion, simulation, the use of resources persons; visits to local farms etc. Learners should list all the different types of agriculture they have observed or had observed or heard about before. They should be guided to describe problems of agriculture and other possible solutions.	Specimens, maps diagrams and sketches.	Through questions, the teacher should be able to find out whether learners can: a) Define and mention the different types of agricult ural systems and methods . b) Explain some agricult ural problem s and suggest possible solution s.
1	6. Industry	Learners	Types:	Guided	Maps, specimens,	Formulae

i	n Nigeria	should be able to: a) Identif y and describ e the major types of industr ies in Nigeri a. b) Locate major industr ial areas in Nigeri a describ e the factors of locatio n; c) Enume rate and discuss at least three major proble ms of industr ial develo pment in Nigeri	Primary Industry; Secondary Industry; Tertiary Industry. Problems – markets, raw materials, transportation , capital, manpower etc. Major industry areas. Factors of industrial location – raw materials.	discussion, problem solving — techniques. Learners should use their atlases as a source of information. Learners should visit a local industry. Learners should also give the names of some products of Nigerian industries.	of industrial products.	questions to test learners' understanding and application of concepts like industrial types, location, factors of location, and problems in Nigeria.
T ti	7. Fransporta ion system	a Learners should be able to: a) Mentio n the major means of transpo rt in Nigeri a. b) Identif y and describ e the transpo rt networ k density around major cities in Nigeri a. c) List major proble ms of	Types: Road transport, rail transport, foot-path; air transport; water transport; pipe-lines, aerial ropeways; port terminus, transshipment point; junctions; etc. Transport network around Ibadan, Kaduna, Kano and Enugu. Major Problems Poor maintenance, weather hazards, seasonality of river regime, high costs of	Discussion method; simulation and game. Learners should study the transportation systems in their atlases and relate the patterns to the relief using the relief map of Nigeria. Learners may use map overlays for making the relationship. Field study of traffic flow in the locality.	Maps, diagrams and sketches models are:	The teacher should ask questions to test learners' understanding of transportation system and compare the one in their locality with those of other localities in their state. Teacher asks learners to show the road networks of their locality on a map.

		transpo rtation.	transportation			
THEMES	UNITS	OBJECTI	CONTENT	TEACHIN	INSTRUCTIO	EVALUATI
		VES		G METHOD S	NAL MATERIALS	ON
XI. Map work	1. Scale	Pupil should be able to: a) Define the concept of scale by giving its attribute s; b) Mentio n and describe the three types of scales; c) Discove r the merits and	Types: Statement- scale; representatio n fraction; linear scale. Merits and demerits of each type scale conversion.	Simulation and game; guided discussion etc. Learners should measure the lengths and breaths of their desks, classrooms and other familiar objects, and express these in scales. Learners are to convert	Models, measuring instruments like rulers, tape measure etc.	Through oral questions and practical application, the teacher should be able to find out whether learners understand and can apply the concept of scale.
		and demerit s of the types; d) Convert one scale to the other; e) Apply the concept s of scale to their life experie nces.		scale measureme nt to actual measureme nt.		
	2. Measure ment of Distance	Learners should be able to: Measure a straight line and a curved line both in the field and on maps.	Measuremen t of distances. Conversion of map distances into actual distances and vice versa.	Simulation and game; Guided discussion to generate problemsolving activities. Learners should compare various alternative routes to a specific point in their locality and account for a choice or preference. Learners should	Diagrams, sketches, models a pair of dividers, strings rulers etc.	The teacher should be able to find out the extent to which learners can measure a straight and curved lines both on the ground through practical activities.

			measure distances with either a piece of string or a pair of dividers or a ruler or with all these.		
3. Map reduction and enlargeme nt	Learners should be able to: a) Reduc e a map to half its origina I size; b) Enlarge a map twice origina I size; c) Discov er that the represe ntative fractio n becom es bigger with reducti on and smaller with enlarge ment. d) Discover that great details appear on an enlarg ed map and fewer	Map reduction; map enlargement; square method. Small and large scales.	Activity methods, guided discussion etc. Learners should compare the position and sizes of features on small and large scaled maps of the same area. Learners should carry out exercises on reduction and enlargemen t of maps.	Rulers, pairs of dividers; maps etc.	Teacher can assess the learners' understandin g by giving them practical work to do.

THEM ES	UNITS	OBJECTIV ES	CONTEN T	TEACHING METHODS	INSTRUCTION AL MATERIALS	EVALUATI ON
	4. Direction and Bearing	Learners should be able to: a) Mention and describe two ways of showing direction; a) Indicate and or	Cardinal points; compass, true north, magnetic north, magnetic variation, northings; eastings; grid	Simulation and game to create practical situations. Guided discussion method; learners should be encouraged to use compass points and	Models, compass maps, and plans.	Assess the learners' understanding and the ability to apply the concept of direction and bearing by giving exercises

	determine	reference	angular		involving the
	direction and bearing; c) Find their ways in the field using compass, prominent landmarks, etc.	orientation , etc.	bearings to show direction both on maps and in the field and in their conversations. Learners have to identify prominent landmarks/feat ures on the map and on the ground; Use direction where possible in class/group discussions e.g. practice in change of direction and position can be given in physical education lessons.		use of compass points, the description of bearings and the calculation references.
5. Convenal symbo	able to:	Conventional symbols; Pictorial, Areal, Literal, Point and Line.	Discussion method, simulation and game. Use problem-solving techniques. Learners should use conventional symbols to depict certain features on local maps.	Models, blank-maps, topography maps.	The teacher should evaluate the learners' understanding by giving oral and questions on recognition and application of conventional symbols.
6. Dra a maj the sc compo	o of should be shool able to:	Scale, convention al symbols, map reduction,	Activity method with emphasis on problem solving. Learners have	Compass, colour; blank maps, rulers etc.	The teacher should serve the learners enthusiasm and assess quality of the

				1
compound	enlargeme	to apply	the	maps reduced
to scale;	nt,	concepts.		or enlarged
b) Insert	direction			and allowing
selected				for measuring
features in				accuracies.
the school				accuracies.
on the map				
using				
convention				
al				
symbols;				
c) Reduce				
and				
enlarge the				
map of the				
school				
compound;				
d) Show				
directions				
on the map				
by giving				
cardinal				
points.				

SELF-ASSESSMENT EXERCISE

- i. Highlight the components of the curriculum development.
- ii. Distinguish between curriculum and syllabus.
- iii. Criticise the arrangement of the topics within this geography curriculum (SS1).

5.0 SUMMARY

In this unit, you have learnt about the essential components of the curriculum development such as the themes, units, objectives, content, teaching methods, instructional materials and evaluation. So also you have acquainted yourself with the hierarchical arrangement of the topics, from known to unknown, that is, local geography to that of other parts of the country (Nigeria).

6.0 TUTOR MARKED ASSIGNMENT

Give a critical appraisal of the senior secondary school class one geography curriculum under the following headings:

- i. The main components.
- ii. The hierarchy of the arrangement.
- iii. The scope of the curriculum.

7.0 REFERENCES/FURTHER READING

Federal Ministry of Education (1985). National Curriculum for Senior Secondary Schools, Vol. 6.

NECO (2006). Regulations and Syllabuses for Senior Certificate Examination (SCE).

WAEC (2006). Regulation and Syllabuses for the West African Senior Certificate Examination.

MODULE 2

Unit 1	Preparation of Scheme of Work and Lesson Note for Teaching Geography
Unit 2	The Formulation of Instructional Objectives in the Teaching of Geography
Unit 3	The Selection of Suitable and Appropriate Teaching Methods for Geography Teaching
Unit 4	Utilization of Instructional Materials in Geography Teaching
Unit 5	The Development of the Cognitive Strategies in the Teaching of Geography

UNIT 1 PREPARATION OF SCHEME OF WORK AND LESSON NOTE FOR TEACHING GEOGRAPHY

CONTENTS

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
 - 3.1 Geography Scheme for Work Preparation
 - 3.1.1 Principles for the Scheme of Work Preparation
 - 3.1.2 Scheme of Work Preparation Format
 - 3.2 Geography Lesson Note Preparation
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Reading

1.0 INTRODUCTION

The two previous units (4 & 5) discussed and explained with copious examples the development and planning of the curriculum and syllabus. In this unit, the preparation of the scheme of work from the syllabus and the writing of lesson note from the scheme of work by the teacher are explained concisely.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- define scheme of work
- differentiate between scheme of work and lesson note
- write a comprehensive lesson note for geography teaching.

3.0 MAIN CONTENT

3.1 Geography Scheme of Work Preparation

From the geography curriculum the geography syllabus is derived by the two examining bodies viz: WAEC and NECO. From the geography syllabus, the school authority or the geography teacher writes out the scheme of work for geography. So, in preparing the geography scheme of work, the syllabus is broken down into details with specific topics distributed among different weeks within a term. Weekly, the topics are detailed about how they will be taught within a term of eleven or fourteen weeks depending on the school calendar for the session as given by the Ministry of Education. However, the scheme of work should be a peculiar guide for a particular class in a particular school based on the peculiarity of the learners and the environment in which the learners are located. In fact, different schools within the same vicinity can have different geography scheme of works since the preparation will be based on the needs of learners in individual schools. That is, in most cases, scheme of work differs from school to school even differs within the same location.

Many teachers of geography therefore find it a herculean task preparing the scheme of work. In preparing the geography scheme of work therefore, care should be taken to reflect how the learners will progress through the syllabus considering their characteristics and the unique nature of the school environment. Furthermore, the scheme of work and even the lesson note should serve as the individual geography teacher's guide or plan towards achieving the goals in the geography syllabus, taking due cognisance of the learners' circumstances and the school's peculiarities.

3.1.1 Principles for the Scheme of Work Preparation

In preparing scheme of work for any subject, the following guidelines should be considered:

- (a) The Syllabus should be scrutinized: It is important for the subject teacher to scrutinize the syllabus so as to be familiar with the topics most especially geography which is considered to be wide in scope. Thorough scrutiny will enable the teacher to organise the topics into logical sequences and manageable units.
- **(b)** The class for the scheme should be considered: The learners' characteristics should be considered in preparing a scheme of work. Therefore, if a particular

scheme of work is imposed on schools it will be unfair because the peculiarities of the learners might not have been considered. In a particular class, some topics might have been treated which may still be pending in other classes in other schools. In fact, a teacher may decide to treat a topic before others.

- (c) The materials available should be considered: The teacher should consider the available materials at his/her disposal to make the task ahead easier. The more materials available to the teacher the faster the rate of proceeding in treating the topics.
- (d) The time length should be considered: It is imperative to put into consideration the length of time at the teacher's disposal. That is, the teacher should take cognisance of the political history of the school, eventualities in the school calendar, among others. This will assist him/her to plan ahead so as to cover most of the expected areas in the syllabus.
- (e) The allotted numbers of periods per subject should be put into consideration: The number of periods allocated to each subject on the timetable should be considered so as to determine the scope of the topics to be allocated per week. In some schools three periods is allotted to geography, while in some other schools four periods per week along side a single double period. All these should be considered so as to determine the numbers of topics to be treated within a week.
- (f) Annual seasonal variations should be considered: In allotting the topics per week, particularly in geography subject, seasonal period should be considered. Most topics especially those that are outdoor-oriented such as excursion or fieldtrip to geographical interesting places, outside the learners' immediate environment should come during the dry season. Topics, such as erosional works of the river should be best treated during the rainy season so that learners can observe the processes.

By and large, in preparing geography scheme of work other factors such as local environment, the school authority's cooperation particularly if the learners are to go on excursion or fieldwork and in fact, the learners' domicile background should also be considered.

3.1.2 Scheme of Work Preparation Format

The format in the preparation of scheme of work should include the following features which is usually in tabular form.

Week: The topics are usually arranged in accordance to the number of weeks within a term. That is 1st, 2nd, 3rd, 4th to the last week of the term, sometimes 13th or 14th depends on the school calendar for the state where the school is located.

Topic: The teacher needs to use his or her discretion in selecting the topics to be taught for each of the weeks within a term. The scope of the topic will determine the numbers of weeks it will take the teacher to teach the topic. It is also advisable to arrange the topics sequentially for easy teaching and comprehension by the learners. The topics should be selected based on the principle of simplicity to complexity or known to unknown, concrete to abstract.

Lesson: Each topic should be divided into several lessons for easy coverage within the period of time stipulated on the timetable.

Objectives: Each lesson should have its own objectives. The objectives should be achievable within the specified periods on the school timetable.

Content: This should include concept, attitude, values, skills, abilities and facts to be developed in learners during the course of teaching.

Teaching Methods: Techniques and strategies to be used by the teacher in teaching the topic should be spelt out. The learners' activities also have to be specified under each lesson.

Instructional Materials: Under each topic, learning materials to be utilized should be specified. Such materials include world globe, topographical maps, atlas, regalia, models, charts, photographs, pictures, etc.

Evaluation: Methods or techniques in evaluating the learners for each topic should be specified. Moreso, this is an era where emphasis is placed on continuous assessment, therefore, both formative and summative evaluation will be germane within the scheme of work.

References: Books and other materials to be used by both the teacher and the learners should be specified under each topic.

SELF-ASSESSMENT EXERCISE 1

- 1. Distinguish between the geography curriculum and geography syllabus.
- 2. Differentiate between geography syllabus and geography scheme of work.
- 3. State the major features in the preparation of scheme of work.

3.2 Geography Lesson Note Preparation

From the scheme of work, the teacher prepares his/her lesson note on a more precise topic that can be covered with a length of time as specified on the school timetable e.g. 35 minutes or more as the case may be. The lesson note is regarded as a statutory record that the teacher should keep and maintain properly for every lesson s/he has on the timetable. Hence, lesson note is peculiar to individual subject teacher. For instance, two geography teachers should not prepare a lesson note on the same topic in the same way because the methods and materials to be used may be different.

3.2.1 Types of lesson that can be taught

There are four major types of lesson that can be taught namely: new lesson, review lesson, continuation lesson and skill practising lesson (Ogunsanya, 1980).

- (i) New Lesson: It is a lesson when a new or a fresh topic is being taught. In this type of lesson, the teacher links the previous knowledge of the learners with the new topic during his/her introduction.
- **(ii) Review Lesson:** This is a lesson where the previous topic taught is retreated again because the learners have not properly acquired some of the skills and competencies. Or the teacher wants to lay emphasis on some salient points for examination purposes.
- (iii) Continuation Lesson: This is a lesson, which might have been previously concluded suddenly or abruptly due to certain event that happened either in the classroom, school or society. In this situation, the teacher recalls what s/he has taught the learners before continuing his or her lesson for easy linkage by the learners.
- (iv) A Skill Practising Lesson: This is a lesson that is specifically organized to teach the learning of the practice of certain skills. In geography, map work is one example of this type or lesson can be organized differently from the three other afore-discussed types. Skills such as identification of contour height, measurement of distance, bearing, computation of gradient among others can be taught during this lesson.

3.2.2 Preparation Guidelines for Lesson Note

In preparing a lesson note, the following guidelines should be considered.

- (a) Thorough scrutiny of the topic prior to the lesson note preparation. The teacher should endeavour to study carefully the topic s/he wants to teach so as to know the content in terms of knowledge, attitudes, values, skills and competencies to teach the learners. Some topics may require knowledge, attitudes and values while others may require skills and competencies.
- **(b)** Learners' Characteristics: Ages, abilities, gender, population size, entry behaviour, learning disabilities among others should be considered by the teacher in the preparation of the lesson note.
- (c) Length of time for the lesson: The teacher should consider the time allotted to each period on the class timetable so as to be able to cover the topic within the limit of time at his/her disposal. A topic on the scheme of work can be broken or split into two or more periods or as it is convenient for the teacher for effective coverage.
- (d) Available instructional materials: Learning materials at the teacher's disposal should be considered to facilitate the teaching-learning process. For instance, in geography map work, the availability and adequacy of the provision of topographical maps for the learners should be considered for effective teaching learning in the geography lesson.

3.2.3 Components of a Typical Lesson Note

Just like the scheme of work that can be described as been the "macro level" of preparation for a lesson, the lesson note is at "micro level". The latter has its own format like the former to follow during the preparation. These features include:

- i. Class: The class for which the lesson note is being prepared for should be indicated.
- **ii. Learners characteristics:** Will include information about the sex, age, class size among others (These are optional at times).
- **iii. Topic:** It must be vividly and specifically stated.
- iv. Instructional/Specific/Behavioural Objectives: These must be stated in measurable, achievable and observable terms. They must be behaviourally stated. That is, overt but not covert behaviours must be stated in the objectives. Action verbs must be stated, such as list, explain, enumerate, differentiate, discuss, mention, compute, calculate, manipulate etc. Covert verbs such as to say, know,

understand, comprehend must be avoided. For example in a topic like "solar system" in geography the instructional objectives can be stated thus: At the end of the lesson, learner should be able to:

- (a) define solar system.
- (b) mention the planets within the system.
- (c) explain the arrangement of the planets from the sun.
- i. Instructional Materials: These are learning materials at the teacher's disposal which are relevant, appropriate and available for teaching the topic selected.
- **ii. Entry Behaviour/Previous Knowledge:** The knowledge, skills, attitudes, values and competencies that the learners had already possessed that could be used or incorporated into the teaching.
- **iii. Introduction:** This could include both the learners' and teachers' activities. That is, the teacher can ask the learners' questions on the previous topic taught so as to recall this in the learners and to link it with the present topic to be taught.
- iv. Reference Books: Recommended and consulted books should be indicated.
- v. **Presentation/Procedure for Teaching:** This is usually in steps. They always include both the teacher and learners' activities. It indicates the procedure for the progress of the lesson. It should be noted that your presentation must be learner-centred but not teacher-dominated.
- vi. Summary/Conclusion: Chalkboard summary of the topic taught can be written by the learners in their notebooks. Or exercises on the topic taught can be done by the learners while the teacher goes round to check or supervise.
- **vii.** Evaluation: This is the area where the teacher determines whether his/her objectives as stated in the lesson have been achieved or not. Questions based on the objectives stated are asked the learners. If they are able to give correct answers to the questions then the objectives have been achieved, if not a "**review lesson**" should be organized for more clarification and comprehension on the topic.
- **xi. Assignment:** At the end of any lesson, always occupy your learners by giving them assignment as a follow up to the topic taught or to the next topic to be treated.

SELF-ASSESSMENT EXERCISE 2

1. Compare and contrast a geography scheme of work and a lesson note.

2. List the main components of a typical lesson note.

4.0 CONCLUSION

Scheme of work and lesson note have constituted an herculean task for the subject teacher in the preparation for effective teaching and learning particularly in teaching geography because of the eclectic nature in the scope of the subject. However, the scrupulous preparation of these two statutory records will make the geography teaching easy for the geography teacher.

5.0 SUMMARY

In this unit, you have been exposed to the following

- i. The preparation of geography scheme of work.
- ii. The principles for the preparation of the scheme of work.
- iii. The format of the scheme of work.
- iv. The lesson note preparation.
- v. The guidelines to be considered for the lesson note preparation.
- vi. The feature of a typical lesson note.

6.0 TUTOR MARKED ASSIGNMENT

Use the sample of the senior secondary school class one Geography Curriculum to prepare a scheme of work for the first term of 14 weeks within a particular academic session.

7.0 REFERENCES/FURTHER READING

Ogunsanya, M. (1984). *Introduction to the Methodologies of Social Studies*. Ibadan: Evans Brothers Ltd.

Mansaray A. (1992). *Geography Methods for External Studies Programme*. Ibadan: University of Ibadan.

UNIT 2 THE FORMULATION OF INSTRUCTIONAL OBJECTIVES IN THE TEACHING OF GEOGRAPHY

CONTENTS

1.0 Introduction

- 2.0 Objectives
- 3.0 Main Content
 - 3.1 Functions of Objectives
 - 3.2 Types of Objectives
 - 3.3 Factors to be Considered in Stating Objectives for Geography Teaching
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Reading

1.0 INTRODUCTION

The formulation and significance of general objectives have been explained in one of the units previously discussed. Therefore, in this unit the importance and the statement of instructional objectives which are usually derived from the general objectives are discussed.

2.0 OBJECTIVES

At the end of this unit, you should be able to

- differentiate between the general objectives and specific or instructional objectives
- explain the importance of stating objectives in specific or behavioural terms
- state specific or instructional objectives in teaching geography

3.0 MAIN CONTENT

3.1 Functions Of Objectives

- (a) They provide direction for the instructional activities. The clarity and specificity in the statement of objectives assist the teacher to decide more easily the appropriate teaching techniques, strategies and methods to be adopted and the instructional activities to be contrived during the teaching-learning process.
- (b) They are tremendously useful in the construction of the meaningful test. In evaluating the lesson, the teacher tests the learners in consonance with the stated objectives; thus, the achievement of the objectives is determined.

- (c) They provide direction to the learners. If the learners are able to be aware of their objectives stated for them in a particular lesson, they are always being motivated, hence, the achievement of the objectives is certain.
- (d) They help in the selection of the appropriate instructional materials. Well specified and behaviourally stated objectives assist the teaching greatly in selecting appropriate instructional media for meaningful and effective teaching-learning process.
- (e) They also assist the teacher in determining the scope of coverage within a particularly lesson. The clarity in the statement of the objectives and the numbers of the objectives stated and achieved at the end of the lesson help the teacher to determine the areas s/he has covered even within a topic.

3.2 Types of Objectives

Objectives are different from each other in many ways. For instance objectives may differ in scope that is, **wide** and **general** or **specific** and **narrow**. That is, objectives can differ in their degree of "generality" and "specificity". Hence, they are 2 major types of objectives - general objectives and specific/behavioural/instructional objectives.

(a) General Objectives

These are objectives that are wide and general in scope. They are stated with covert behaviours. They are not achievable, measurable and observable within a limited period of time. In fact, they are long-term achievable objectives. Example of this objective is: **Learners should be able to know the industries in Nigeria.** The verb "**know**" is not measurable or even observable or achievable. It is a covert behaviour. It is not an action verb. Therefore, this type of objective is not achievable within a specified period of time; hence, it is referred to as general objectives because of its scope and behaviour that are wide and covert in nature. Other examples include **to say, to understand, to comprehend** etc.

(b) Specific/Behavioural/Instructional Objectives

These are objectives that are very narrow in scope. They are stated in measurable, observable and achievable terms. Action verbs are used in stating the objectives. The objectives are usually stated in behavioural terms, that is, with overt behaviours. Action verbs such as mention, list, highlight, enumerate, compute, calculate, demonstrate,

discuss, explain, manipulate, itemize, draw label, identify, recognize, justify, elucidate, observe, locate, organize, arrange, produce, define, execute, mix, describe, trace, enlarge, reduce, measure, interprete, increase, decrease, record, prove, investigate, find out, contrast, design, compile, discover, assess, evaluate, express, change, recall, recite, display, read, analysis, examine, adapt, adopt, write, criticize, dramatize, relate, prepare etc. can be used in stating objectives behaviourally and specifically in any subject, geography inclusive.

For instance in stating specific objectives for a topic like: Cottage industries in Nigeria. At the end of the lesson, learners should be able to

- i. Define cottage industry
- ii. Mention different types of cottage industries in Nigeria
- iii. Locate where the cottage industries are found in Nigeria.
- iv. Explain the economic importance of cottage industries in Nigeria.
- v. State the problems confronting cottage industries in Nigeria.

3.3 Factors to be considered in stating Objectives for Geography Teaching

For stating instructional objectives in any subject, geography inclusive, the following factors should be put into consideration.

- (a) The Scope of the Topic. The content of the topic should be taken cognizance of in terms of cognitive, affective and psychomotor aspects of the learning outcomes expected from the learners. In fact, these will determine the number of the specific objectives to be stated.
- **(b) Learners' Characteristics:** The age, gender, requisite background knowledge of the learners among others should be considered while stating the objectives. That is, your objectives should be learner-centred and not teacher-centred. The objectives should state specifically the overt behaviours you are expecting from the learners. Learners should be more active than the teacher. The objectives should be learner-activity-oriented and not teacher-activity dominated.
- (c) Lesson duration available: The duration for the lesson on the class timetable should be considered. For instance, the number of objectives to be stated for a period of forty minutes should be less than that of eighty minutes (double periods). The time of the day should also be considered. In most cases, morning lessons are always more effective, enjoyable and conducive to the learners than the afternoon lesson, thus, more objectives are most likely to be achieved in the former than the latter.

(d) Instructional materials that are available. Since instructional materials are facilitators for effective learning, therefore, these materials that are available to the teacher should be considered. For instance, in teaching map reading in geography, topographical maps should be at the teacher's disposal. In fact, it is advisable to give a map to a student. So, in a class of thirty-five students, thirty-five topographical maps are required for effective learning to occur. In other subjects, instructional materials are also essentially needed, thus, consideration should be given for meaningful and effective learning to materialize.

SELF-ASSESSMENT EXERCISE

- 1. List FOUR functions of objectives in a lesson.
- 2. Distinguish between general and specific objectives.
- 3. Mention THREE reasons why objectives should be stated in behavioural on specific terms in the geography teaching.
- 4. State THREE instructional objectives on the topic "Rotation of the Earth".

4.0 CONCLUSION

General objectives are stated in general terms, that is, they are not easily achievable within a short period of time. They are long term achievable objectives whereas, the specific or behavioural objectives are achievable within a short period, in fact, within a lesson of forty minutes. The instructional objectives are also measurable and observable since they are stated in behavioural term with action verbs such as list, mention, discuss, enumerate etc.

However, in stating the objectives, certain factors such as learners' characteristics, scope of the topic, duration of the lesson and instructional materials available to the teacher should be considered.

5.0 SUMMARY

In this unit, you have learned the following:

- i. General objectives and specific objectives.
- ii. How to state objectives in behavioural and specific terms in geography teaching.
- iii. The importance of stating objectives in behavioural terms.
- iv. Factors to be considered in stating objectives in specific terms.

6.0 TUTOR-MARKED ASSIGNMENT

Write a comprehensive lesson note on the topic "Solar System" for a period of eighty minutes, senior secondary school one with 40 students in population size.

7.0 REFERENCES/FURTHER READING

Ogunsanya, M. (1982). *Introduction to Social Studies Methodologies*. Ibadan: University of Ibadan.

Okunrotifa, P.O. (1977). Evaluation in Geography. Ibadan: Oxford University Press.

Olowu, F.A. (2005). *Educational Technology A Conceptual Guide*. Ijebu-Ode: Gindalom Books Publishers.

UNIT 3 THE SELECTION OF SUITABLE AND APPROPRIATE TEACHING METHODS FOR THE GEOGRAPHY TEACHING

CONTENTS

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content

- 3.1 Teaching Methods
 - 3.1.1 Discussion Methods
 - 3.1.2 Project Methods
 - 3.1.3 Inquiry Methods
 - 3.1.4 Lecture Methods
 - 3.1.5 Questioning Methods
 - 3.1.6 Acitivity Methods
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Reading

1.0 INTRODUCTION

In any pedagogical practice, the teacher engineers the learning environment through his/her skilful, tactical and technical ways of imparting the knowledge into the learners. These ways are christened **teaching methods**. Therefore, teacher as the initiator or originator of the instructional communication process, should carefully select appropriate teaching methods, or techniques or strategies that will suit the learning environment for effective teaching-learning process to take place. In the unit, various teaching methods, techniques and strategies that can be adopted for geography teaching are discussed concisely.

2.0 OBJECTIVES

At the end of this unit, you should be able to

- define teaching method
- mention factors to be considered in selecting appropriate teaching methods
- state various teaching methods/techniques/strategies that can be adopted for teaching geography.

3.0 MAIN CONTENT

3.1 Teaching Methods

In defining teaching methods, the first question to be asked is "what is teaching? Teaching therefore can be defined as a system of actions intended to induce learning.

In fact, there are various definitions of teaching but we would stick with the one stated above in this discussion because it is more germane to the area of focus. From the definition, it can be deduced that teaching is not just a monotype activity, it consists of a series of activities which are clear-cut from each other. However, since the teacher's intention is to make learning effective, the nature of the activity is immaterial. Therefore, for any activity to be accepted as teaching, there must be involvement of the learners teacher and the subject matter or content.

This can be diagrammatically illustrated thus:

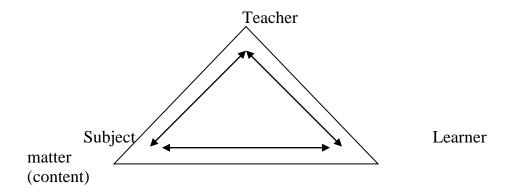


Fig. 8.1: Essential Components of Teaching

Source: Hyman (1970). *Ways of Teaching*. Philadelphia J.B. Lippincott Co.

In the Fig. 8.1 above, it can be inferred that, teaching involves the interplay of the teacher; the learners and the subject matter. It explains therefore, the connection between **teaching** and **learning**. That is, the teacher teaches so as to impart knowledge, skills, values, attitudes etc. in the learners – (content) which will definitely constitute the "learning experience". However, different ways can be employed or adopted by the teacher in imparting the knowledge. These different ways are referred to as **teaching methods**. Such methods include: discussion method, project method, inquiry method, lecture method, questioning, activity method, fieldtrip method, and laboratory technique among others. Meanwhile, the major methods that are relevant and germane to the teaching and learning of geography will be concisely discussed in this unit.

3.1.1 Discussion Method

It is one of the most easily comprehend methods of teaching in the sense that every teacher is daily involved in one form of discussion or the other either within or outside the school.

Although, the unconscious use of discussion methods permeate all the other teaching methods with perhaps the exception of the ideal lecture method. However, what is

required is the deliberately planned and systematic use of the discussion method. Discussion can take various forms in the teaching of geography. It can be between and among small or large groups of learners during which they contribute, share, examine, expand, simplify, formulate, clarify, propose, suggest, prove, argue, question, accept or reject ideas or opinions.

It is important for teachers to take proper note of the above overt behaviours and action verbs with a view to translating them into operation in the appropriate classroom situation particularly during the teaching of geography.

For example, the teacher should plan ahead the nature of the discussion method s/he wants to use for each lesson that is, what combination of the above listed action and overt behaviour verbs s/he wishes to employ. Such as to

- i. Contribute, share, examine
- ii. Propose, argue, accept or reject
- iii. Formulate, prove, argue, question, accept or reject
- iv. Examine and expand
- v. Suggest, question and clarify etc.

Moreover, the usefulness and effectiveness of the varieties of discussion methods listed above can be considerably enhanced if adequate instructional materials are effectively utilized with the adoption of the methods. For instance, to examine, share, clarify, simplify, accept or reject ideas easily may use in addition, the use of relevant instructional materials. However, the teacher's role in all the discussions is that of a facilitator, guide, assistant, moderator, contributor and aid to the discussion.

3.1.2 Project Method

It involves doing something practical, concrete and realistic which is self-motivated, self-generated and self-directed by the learners themselves. The role of the teacher is to inspire and guide the learners in the process of carrying out the project. The teacher should try as much as possible to encourage learners on projects that help to clarify concepts in geography. The following are examples in geography where projects can be carried out.

- (a) Interpreting and making or drawing maps.
- (b) Construction, modelling, drawing, painting, labelling, identifying, observing etc.
- (c) Collecting rocks, fruits materials and specimens of geographical interest.
- (d) Visiting factories, market places, zoos, museums, etc and reporting one's experiences.
- (e) Excursion and fieldtrip to the geographical interesting places etc.

By and large, the following benefits can be derived from the utilization of the project method:

- (a) It enables the learners to make use of their total experience.
- (b) It involves the use of initiative and responsible thinking by the learners.
- (c) It provides for the manipulation and experimentation of ideas by the learners.
- (d) It gives the learners the opportunity for satisfaction derivable from learning by doing and self-motivated activity as well as seeing the product of their efforts.
- (e) It makes learning practical, realistic and pragmatic.
- (f) It encourages spirit of cooperation, leadership and dignity of labour in the learners.

However, if the project method is not meaningfully and properly executed it may lead to time loss, energy wasted and in fact, financial loss. Therefore, this method needs proper planning and scrupulous execution for a worthwhile feedback.

3.1.3 Inquiry Method

It involves probing, inquiring, investigating, analyzing, discovering, evaluating, questioning, thinking, searching, exploring, experimenting, collecting with a view to acquiring updating or validating knowledge and information in geography. It is simply a method of finding out something. The main benefit of this method is that it motivates the learners on how to reason and think for themselves. Therefore, the acquisition of these skills is very crucial and in fact, important for the learners of today and the future who have to face a myriad of unprecedented socio-political and economic problems to which they will have to find solutions to with a credible creativity.

Meanwhile, in the geography teaching, the use of inquiry method arises out of the curiosity or inquisitiveness of the user. Therefore, the children in elementary schools have little or no problem with this problem because they are full of curiosity already. However, in the post primary school institutions, the teacher has to put in greater effort in imparting the skill of "how to find out, and think through and the regular use of the inquiry method.

The following steps can be adopted during the process of inquiring.

- (a) Problem identification
- (b) Information and data collection on the problem identified.
- (c) Data analysis
- (d) Solutions derived from the analysed data or information.
- (e) From the solutions derived, make a generalization.

3.1.4 Lecture Method

It is the oldest teaching method which is believed historically to be dated back into antiquity. It is also referred to as **expository method** because it is teacher-dominated and learner's passive method. It is also known as **talk-and-chalk method** in a situation when the teacher decides to write the summary of the points s/he has taught on the board. In fact, in this method, the learners' involvement and participation is at low ebb because communication is often one way for most of the time during the teaching-learning process.

However, in a large class of learners and in a situation where there is inadequate number of competent and qualified teachers coupled with the insufficient instructional materials, lecture method with note taking technique may be more effective than any other methods. In fact, in the geography teaching, lecture method will be more effective in a very large class situation in which the teacher combines the method with the effective use of instructional materials, questioning technique and other appropriate strategies (that can be employed based on the classroom situation).

3.1.5 Questioning Method

This method is one of the most superficially used in teaching and in fact, badly employed. Many teachers seldom use this method but they encourage questioning by the learners so as to cover up their inadequacies particularly concerning their knowledge of the subject matter. Nevertheless, at all levels of educational system and in all subjects, a whole lesson could be taught from the inception to the end through questioning method. This may not exclude any other appropriate and suitable methods that can be combined with the questioning technique. However, the following important factors should be considered in utilizing this method.

- i. The questions should deal with important areas of the subject matter.
- ii. The question must be of the learners' interest.
- iii. The questions must not be vague and ambiguous.
- iv. The questions should not be too difficult or easy for the learners to answer.
- v. The questions should be logically expressed and structured.
- vi. The development of the habit of critical thinking in the learners should be encouraged through the questioning.
- vii. Questioning should encourage both teachers and learners in the preparation for every lesson.
- viii. It should be able to enhance both the teacher's learners' performance.

3.1.6 Activity Method

Generally speaking, activity method enables learners to learn by doing, to imitate and be engaged in self-directed activity; to study at site, to observe and recognize, to imagine and create etc. The method also serves as the link between the classroom situation and the outside world. That is, learners are in constant touch with the outsides world through this method. It is akin to project method, fieldtrip and laboratory techniques.

In the geography teaching, the following can be embarked on during this method

- i. Map drawing and interpretation.
- ii. Modelling of object, physical features e.g. with papier mache.
- iii. Collection of materials e.g. sample of rocks, crops, soil, minerals etc.
- iv. Films watching on geographical interesting topics or documentations.
- v. Writing reports on visited places during field trips or executions.
- vi. Visiting places of geographical interesting places.
- vii. Gathering information through interview, on geographical interesting topic e.g. market survey or prices of commodities etc.

To sum up, in any classroom situation, it is advisable to employ eclectic methods of teaching, that is, not to be stereotyped to a particularly method of teaching. For example, project method can be combined with activity method cum discussion, questioning, inquiry methods etc. This makes teaching and listening more effective and exciting to the learners.

However, the selection of the teaching methods to be adopted by the teacher should be guided by the following factors:

- (a) The subject matter or topic to be taught.
- (b) Learner's characteristics such age, ability levels, gender etc.
- (c) The formulated instructional objectives by the teacher.
- (d) The instructional materials available.
- (e) The time and place of the lesson.

These factors have been discussed copiously in the one of the previous units. Check for detailed explanation on the factors.

SELF-ASSESSMENT EXERCISE

- 1. What is teaching method?
- 2. Mention FIVE factors to be considered in selecting appropriate and suitable teaching methods in the geography teaching.
- 3. Explain FOUR teaching methods that can be employed in the teaching of geography.

4.0 CONCLUSION

Teaching methods are varied from one teacher to the other. Hence, there are varieties of these methods that a teacher can employ during his or her teaching such as discussion, activity, questioning, project, lecture methods among others. However, in selecting these methods, certain factors should be considered such as learners' characteristics, subject matter, time and place of lesson, instructional materials, and instructional objectives.

5.0 SUMMARY

In this unit, you have learnt the following

- i. The relationship between the teacher, learner and subject matter.
- ii. Relationship between teaching and learning.
- iii. Various types of teaching methods that can be employed in the teaching of geography.
- iv. Selection criteria for the utilization of the appropriate teaching methods in the geography teaching.

6.0 TUTOR-MARKED ASSIGNMENT

Describe how fieldtrip technique can be adopted in the teaching of cottage industries e.g. "Pottery in Nigeria" in geography to a group of 30 students in senior secondary school class one.

7.0 REFERENCES/FURTHER READING

Mansaray, A. (1992). *Geography Methods for External Programme*. Ibadan: University of Ibadan.

Ogunsanya, M. (1992). *Introduction to Methodologies of Social Studies*. Ibadan: University of Ibadan.

UNIT 4 UTILIZATION OF INSTRUCTIONAL MATERIALS IN GEOGRAPHY TEACHING

CONTENTS

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
 - 3.1 Instructional Media in the Geography Teaching
 - 3.2 Selection Criteria for Media Utilization
 - 3.3 Types of Instructional Materials to be used in the Geography Teaching
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment

7.0 References/Further Reading

1.0 INTRODUCTION

In the teaching-learning process, the use of instructional materials is very important because they are learning facilitators. In fact, they make teaching-learning process interesting, exciting, lively and motivating. They are given different nomenclature such as teaching aids, learning materials, educational media, learning resources, audio-visuals, instructional media, among others. In this unit, instructional materials utilization in the teaching of geography is discussed concisely.

2.0 OBJECTIVES

At the end of this unit, you should be able to

- define instructional materials
 - state the factors to be considered in the selection and utilization of the instructional materials in teaching geography
 - mention the instructional materials that can be used in the geography teaching.

3.0 MAIN CONTENT

3.1 Instructional Media in the Geography Teaching

Instructional media are the information carriers that are used in any teaching-learning process to facilitate the rate of learning (in the learners) and so also to enhance the teacher's presentation of the learning content (subject matter).

In the teaching-learning process, the following are the reasons why instructional media should be utilized.

- i. To focus attention
- ii. To motivate learners' interest
- iii. To reinforce verbal and visual messages
- iv. To elucidate verbal concepts
- v. To save teacher's time for presentation
- vi. To provide source of information and authority
- vii. To provide experience not otherwise available
- viii. To make learning more practical, exciting and lively
- ix. For easy evaluation of the learning outcomes
- x. To make the learning more permanent and real in the learners

However, for the media to be effectively used during the teaching-learning process, particularly in the teaching of geography, the following steps should be followed:

- (a) Preparation (b) Presentation (c) Evaluation (d) Follow-up
- (a) **Preparation:** This consists of two steps:
- (i) Teacher self-preparation: Teacher should prepare properly the media to be used before going to the classroom. The media should be previewed properly in terms of visual and audio aspects of the media. The selection should be properly done based on certain criteria that should be followed which will be discussed later in this unit. The preparation should be systematically done in consonance with the instructional presentation procedure (to be followed while getting to the classroom).
- (ii) Class Preparation: This involves both the learning environment and class preparation for the utilization of the media. The teacher should make sure that the learners are properly arranged for free movement and adequate ventilation and illumination. The media should be properly arranged for easy viewing and auditory. As much as possible all forms of "noise factors" should be eliminated that is, physical psychological, physiological and linguistic factors for effective teaching-learning process to take place.
- (b) Media Utilization in the Classroom: The use of the media in the classroom by the teacher can be during the introduction, presentation and evaluation of the lesson. In fact, the media can be use continuously and sequentially depending on the teacher's discretion and areas where s/he wants to lay emphasis for the learners to take note. Make sure that the media are not underutilized or over-utilized so that they do not constitute distractions
- **Evaluation:** Media can be used to find out if the stated objectives have been achieved or not. Therefore, the media can be utilized to determine which of the learning outcomes have been successfully acquired by the learners. This will determine the effectiveness of the media and even the success/failure of the lesson.
- **(d) Follow-up:** Media can be used in giving assignment to the learners as follow-up against the next topic or lesson. Exercises or problems can be given to the learners based on the media presented.

3.2 Selection Criteria for Media Utilization

The following factors or criteria should be considered for effective utilization of media in any teaching-learning process.

- (a) Subject Matter and Instructional Objectives: The media to be selected should be in accordance with the stated objectives in the topic or subject matter to be taught. That is, the media should facilitate the achievement rate of the objectives whether is in the area of cognitive, affective or psychomotor domains.
- (b) Learners' Characteristics: The learners' number, or population, age, ability etc in the classroom will determine the type of media to be selected and utilized. For instance, for small group of about 30 learners, chart, models, realia or non-projected media can be used, while in a large class of about 500 learners, projected media like overhead projector (OHP), computer power point, etc should be more appropriate to be used.
- (c) Media Availability: The teacher should be sure if the materials to be used for the media production are available locally or are commercially produced. Or, if they are available in the school or they have to be loaned from other school or learning resources centre within the locality. Or sometimes the teacher can improvise them.
- (d) Content Accuracy: The information being conveyed by the media should be authentic, accurate, valid and current and should be within the content of the topic to be taught.
- **Sophistication Level:** This simple connotes the complication level of the media. That is, the teacher should make sure that the messages being carried by the media are within the learners' ability, comprehension, age, background, and knowledge among others. The vocabulary and visualization should be within the learners' level of understanding.
- (f) Practicability: The teacher should make sure that necessary facilities for putting the media selected into practical use in the classroom are available such as source of power e.g. electricity, battery (dry or wet cells) or any other means of generating power. These are particularly essential for projected media. For non-projected media such as realia, or real objects, they should not be harmful or frightening to the students e.g. the use of a live snake in the classroom is not practicable. It should be more appropriate to use model of snake or picture.
- **Teacher's Capability:** The teacher should be able to use the media selected effectively in the classroom. The teacher should properly understand the operation of the media. For example, if the teacher wants to use computer, s/he should know how to operate it at the response of the learners so as not to expose his/her ignorance.

- **Suitability:** The media selected should be suitable to the content of the topic to be taught by the teacher.
- (i) Cost on Financial Implication: The cost of producing the instructional materials by the teacher should be considered. The availability of fund should determine the media type to be used. The cost effectiveness of the media should also be considered. For instance using power point computer projector for a class of 10 students may not be cost effective, or cost-wise like for large group of 200 students or more.
- **Technical Quality:** The visual and audio aspects of the media should be of good quality. The lettering should be legible, bold, simple and attractive. Appropriate colour should be used e.g. blue for water, green for vegetation etc. Avoid multiple focal messages. Let your messages focus on simple information not on complex so as not to distract attention.

3.3 Types of Instructional Materials to be used in the Geography Teaching

The following media can be selected for utilization in the teaching of geography based on the criteria afore-discussed.

- a. World Globe: This is one of the essential instructional media that a geography teacher should always make reference during his/her teaching. It can be used to teach topics such as the earth's spherical shape, latitude, and longitude, global land and water distribution, world continents, locations of places on the globe, rotation and revolution of the earth among others. In fact, it shows exactly how the whole world is all about since it is a three and not like the atlas map, which is two. It is however, disheartening, that geography teachers in most schools in Nigeria, seldom use this medium (the world globe) because it is not procured for the school or the teachers grossly underutilized it when it is available in the schools.
- **Maps:** These are "sine qua non" tools for the geographers. That is, maps are very important and essential for the geographers (both the teachers and learners). They are of different types atlas, topographical maps, aerial photographs, etc. The geography teacher is to select the one that is most appropriate and suitable for his/her topic or content to be taught. For instance, for map reading and interpretation, topographical maps will be more appropriate, though other maps can still be consulted as supplements or compliments. For locations of places on

the maps, atlas can be conveniently used. However, all these depend on the availability of these various types of maps in the school.

- c. Models: These are three-dimensional media that shows the length, breadth and height of the objects. They are very useful in the teaching of geography if physical or relief features can be put into models. Papier mache can be used to mould features such as conical hill, knoll, valley, spur, plateau, cuesta etc in map work practical. With the use of models, the lesson becomes real, practical and exciting because the learners can visualize, feel and observe in real life how these features exist.
- d. Charts, Diagrams and Pictures: These are two-dimensional media that represent a complete description of phenomenon or place. They can be used complementarily. Therefore, where pictures cannot show all the area or information require charts and diagrams can be used. They are of different types viz: single page chart, and flip chart sometimes of multiple pages that are sequentially arranged in order of content or events to be taught. However, in using these media, certain factors should be considered by the teacher such as, the clarity, attractiveness, legibility, boldness, simplicity, balancing and the conspicuousness in the displaying of the media in the classroom situation.
- e. Realia/Real Objects: The geography teacher can use mineral resources samples rocks sample, soil samples, etc. as real objects to teach in the classroom. For instance, in teaching topic like "Types of Rocks" samples of different rocks such as granite, limestone and marbles can be shown to the learners as examples of igneous, sedimentary and metamorphic rocks respectively. This makes learning more concrete, realistic and practical, the learning becomes more permanent in the learners.
- **Meteorological Instruments:** These are common weather instruments that the geographers use to measure certain climatic elements viz; rain gauge, thermometer, wind vane, anemometer, barometer and hygrometer for rainfall.
- **g. Projected Media:** These are media that use source of power for generating them. They include, over head projector (OHP), slide projector, opaque projector and the most recent is the computer power point. In fact, these media can be used advisably to teach large class for their cost-effectiveness.
- **h. Chalkboard:** This may be movable, fixed or portable ones. The fixed or removable chalkboard is usually found in a typical classroom, while the teacher usually produces the portable chalkboard that s/he can move around. However, chalkboard of any type is mostly used for illustration, clarity of points or concepts

and to summarize the content taught. In fact, the geography teachers should mostly use the portable chalkboard for prior preparation and presentation of drawings, diagrams, maps, graphs, etc; this will save time and energy during the classroom presentation.

i. **Printed Media:** Such as textbooks, magazines, periodical, reports, paper cuttings can be consulted or utilized by both teacher and learners in the teaching of geography.

SELF-ASSESSMENT EXERCISE

- 1. What are instructional media?
- 2. Mention FIVE selection criteria for the utilization of the instructional media in the teaching of geography.
- 3. Describe FIVE instructional materials that can be utilized in the geography teaching.
- 4. Give FIVE reasons for employing the use of instructional materials in the teaching of geography.
- 5. State FOUR steps to be followed in the utilization of instructional media in the geography teaching.

4.0 CONCLUSION

Instructional media are no doubt the information carriers that facilitate teaching learning process. However, the selection and utilization of these media should be based on certain criteria such as learners' characteristics, instructional objectives, suitability, technicality, practicability, and the teacher's capability among others. Maps, globe, charts, models, meteorological instruments, etc should be employed in the teaching of geography to facilitate and make learning more effective and interesting.

5.0 SUMMARY

The following were concisely treated in this unit which are believed might have been thoroughly digested by you.

- i. The meaning and definition of instructional media.
- ii. Reasons for using media in the teaching of geography.
- iii. Selection criteria for the media utilization in the geography teaching.
- iv. Steps to be followed in the utilization of the instructional media.
- v. Types of media that can be utilized in the teaching of geography.

6.0 TUTOR MARKED ASSIGNMENT

Describe concisely how you will use "world globe" to teach the topic "Earth's Rotation" in the teaching of geography in senior secondary school one of 30 students within a period of 40 minutes.

7.0 REFERENCES/FURTHER READING

- Agun, I. and Imogie, I. (1988). Fundamentals of Educational Technology. Ibadan: Y-Books Publishers.
- Olowu, F.A. (2005). *Educational Technology, A Conceptual Guide*. Ijebu-Ode: Gondalom Books.

UNIT 5 THE DEVELOPMENT OF THE COGNITIVE STRATEGIES IN THE TEACHING OF GEOGRAPHY

CONTENTS

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
 - 3.1 The Significance of Cognitive Strategies in Teaching Geography
 - 3.2 Methods of Developing Cognitive Strategies in Geography Teaching
 - 3.2.1 Questioning Techniques
 - 3.2.2 Problem Solving Techniques
 - 3.2.3 The Discussion Method
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Reading

1.0 INTRODUCTION

In developing cognitive strategies, thinking skills are acquired. That is, cognition is akin to ways of thinking. These ways of thinking are developed in the learners so as to be able to find solutions to the problems that they may be confronted or encountered within their environment. Therefore in this unit, methods of developing these ways of thinking are discussed.

2.0 OBJECTIVES

At the end of this unit, you should be able to

- explain the significance of thinking on cognitive strategies in geography
- describe the methods of developing the cognitive strategies in geography teaching.

3.0 MAIN CONTENT

3.1 The Significance of Cognitive Strategies In Teaching Geography

In unit 2, aims and objectives of teaching geography have been discussed in details. Among these aims and objectives, one of them (no 5 (e)) states that "to develop in learners the critical thinking ability, accuracy and objectivity for proper and logical investigations". This is in consonance with the cognitive strategies development. Cognitive strategies connote the abilities to think or ways of thinking. One of the ways is the critical thinking ability.

That is, to be able to think critically means a number of activities such as keen observation of the environment, phenomena within the environment, vivid and accurate recording of the things observed, the ability to investigate and collect relevant information, the ability to analyse the information collected and to draw inferences from those analysed data.

Other activities include: the ability to form judgement based on facts, differentiating between opinion and facts, logical thinking, critical reasoning among others. The aforementioned activities constitute thinking strategies. They are the strategies that the learner should learn because they are not born with them. They acquire these strategies through constant practice.

Moreover, such thinking skills are very important because they enhance the learners' rational thinking ability about their environment. These skills will also enable them to proffer possible solutions to environmental problems that they may encounter in life. Therefore for these reasons, the cognitive strategies development in the teaching of geography is very important.

3.2 Methods of Developing Cognitive Strategies in Geography Teaching

In developing the cognitive strategies in the teaching of geography, some teaching methods should be employed namely: questioning technique, problem solving and discussion method.

3.2.1 Questioning Techniques

Questioning is one of the most important techniques or skills involved in teaching learning process and when skillfully handled, it often makes for a good teaching. In developing cognitive strategies in the teaching of geography questioning techniques can be used in the following ways.

- i. To call a mind-wandering learners to order and keep every learner at alert in the course of teaching.
- ii. To provoke deep thinking in learners and pose challenges to the nonchalant ones and those having inferiority complex.
- iii. To expose the duration of thinking of the learner to the teacher and to enable him/her to know the areas of need of a particular learner.
- iv. To provide information for the teacher about the learners' entry behaviour.
- v. To serve as instrument of evaluation to the teacher.

However, in using questioning techniques for the development of cognitive strategies in the teaching of geography, it is important that the teacher should be aware of the types of questions that could be asked. Thus the following types of questions can be asked in developing cognitive strategies in the teaching of geography.

- **i.** A convergent question allows for only one right answer e.g. Mention a confluence settlement in Nigeria.
- **ii. A divergent question** allows for many possible answers e.g. what is earth's rotation? State proofs to show the earth's sphericity.
- **iii. Factual question:** This simply tests the learners' ability to recall from memory e.g. State the formula for computing gradient of the slope.
- **Empirical questions:** These expect the learners to analyse before giving the answer e.g. what is the local time of a place X (Lat 25⁰N; Lon. 35⁰E) if the local time in place Y (Lat 25⁰S; Long 35⁰W) is 9.30 a.m. on Saturday?
- v. **Productive question:** This is usually open-ended. They require reflective thinking and use of imagery e.g. Highlight solutions to problems of agriculture in Nigeria.
- **vi. Evaluative question:** It is also an open-ended question just like the productive one but in addition it is usually more difficult to answer because it supposes to judge or place value on something e.g. Differentiate between the rotation and revolution of the earth.
- **vii. Focusing question:** This is used to assess the amount of knowledge gained the learners during a lesson. The question focuses on the present subject of discussion. It could be factual, empirical, productive and evaluative.
- **viii. Probing question:** This encourages learners to develop a critical thinking ability e.g. Give example of an inland drainage in Nigeria.

- ix. Learner's answer: Lake Chad
- **x. Teacher:** Why is Lake Chad being described as an inland drainage?

3.2.2 Problem Solving Techniques

This technique involves investigating, searching, discovering, analyzing, questioning and evaluating. It is a technique in which the learners discover things themselves. The following are the steps to be followed in employing this technique.

- (a) Identification and Statement of a Problem: Define a problem that the learners will comprehend. This may be a question to which the learners do not immediately possess the answer or for which it appears to be more than one correct answer. It may be a situation that needs clarification. In geography, such questions like, why is a particular area on the map thickly populated or sparsely inhabited? These types of questions should be significantly related to the topic or content area and could be posed by the teacher to the leaner. However, the problems posed should be thoroughly comprehended, by the learners and they should be able to collect relevant information with the teacher's assistance.
- **(b) Formulation of Hypotheses:** Tentative answer in form of quizzes to the problem identified can be suggested. They are tentative because it is not absolutely sure whether they are the real answers to the problem or question posed. The learners themselves under the guidance of the teacher should state the hypotheses.
- (c) Collection of the Data: Collection of data is purely a learner's dominated activity. It is the stage when the relevant information to the problem is collected. The teacher is just to suggest to them possible sources and methods of data or information collection.
- (d) **Data Analysis:** The information collected will be analysed in form of data so as to explain the existence of the phenomenon under study and for the selection of the plausible solutions to the problem identified.
- (e) Arriving at a Solution to the Problem: This stage should be logically done in line with the information analysed and the hypotheses tested. However, at this stage, the hypotheses could either by rejected or accepted based on the results of and findings from the analysed data.
- (f) Drawing Conclusion and making Inference: At this stage, the learners themselves should be able to draw conclusions based on their findings from the data collected and the hypotheses tested. For instance, based on the question

posed, the finding or evidence or conclusions may be because the area of the map that is thickly populated is because of the plain and fertile topography while the sparsely populated areas is due to the rugged topography coupled with poor soil fertility and absence of good communication networks.

This method affords learners an opportunity to have direct interaction with their local environment and in fact, to find out themselves environmental problems or challenges.

The training of crucial skills such as keen observation, recording, making judgement based on the collected and analysed data is also being encouraged through this method.

However, for effective use of this method in the teaching of geography, the teacher needs to ensure that the learners collect relevant information to the problem posed. Problem posed should be stimulating, and learners' interest-oriented. In the ideal situation, the collection of the data should have been properly planned by the teacher so as to save the learners' time or making it quick for the learners to collect the data.

3.2.3 The Discussion Method

This is another method for developing cognitive strategies in geography teaching. In this method, learners are afforded the opportunity to examine or investigate their own thinking as well as those of others. The teacher is just a facilitator; the learners will arrive at their own knowledge through their effort. The teacher's major task is to challenge and prompt learners to think and discover things on their own. The teacher may be the moderator, coordinator or appoints somebody to direct the discussion activities.

However for the teacher to be able to organize an effective discussion method, these steps should be followed.

- 1. The topic of discussion should be decided prior the class presentation. That is, the teacher should have chosen a learner's interest-oriented topic, which should also be thought provoking and argumentative. The teacher should also appoint somebody to serves a "rapporteur" or somebody to summarize and note the salient points during the discussion process.
- **2. Discussion type should be decided**: The teacher should try as much as possible to decide ahead the type of discussion that the learners will part take in. There are a couple of those discussion types:
 - (a) Debate
 - (b) Round table discussion
 - (c) Brainstorming
 - (d) Small group discussion

- (e) Panel discussion etc.
- **3.** Learners should be guided in sticking to the point in their discussion. It is the responsibility of the teacher to lead and guide the learners to stick to a particular point since they are still novice in discussion activities.
- **4.** Learners should be encouraged to pay attention properly during the discussion activities. The teacher should make sure that the learners are properly motivated and encouraged to be attentive so as to comprehend what the discussion is all about and to be able to contribute meaningfully to the discussions. Listening skills should be more emphasized by the teacher so as to assist the learners to discover the strength and weak points of the discussants.
- **5.** Learners should be encouraged to support their points with facts and possibly figures. In geography teaching, emphasis is placed on the differentiation between facts and opinions, therefore, learners should be encouraged to support their argument with facts and where possible with figures, that is, to quantify their points.
- **6. Learners should be prompted to ask questions.** Encourage the learners to ask questions in the areas where they are not clear about something.
- **7. Participation among the learners should be encouraged**. The teacher should encourage as many learners as possible, to participate actively in the discussion. In fact, the discussion should not be dominated by a set of individual learners. Everybody in the class should be given equal chance to freely participate in the discussion.

SELF-ASSESSMENT EXERCISE

- i. What is the importance of cognitive strategies in the geography teaching?
- ii. Mention THREE methods that can be employed in developing cognitive strategies in the teaching of geography.

4.0 CONCLUSION

Cognitive strategies are ways of thinking that should be developed in the teaching of geography because it encourages the development of critical thinking, accurate analysis and logical conclusion in the learners. These will assist the learners to proffer plausible solutions to the problems encounter in their environment. Methods such as problem solving, questioning technique and discussion method can be employed in developing those cognitive strategies in the teaching of geography.

5.0 SUMMARY

In this unit, the following have been thoroughly digested by you

- i. Meaning of the cognitive strategies
- ii. The importance of cognitive strategies in the teaching of geography.
- iii. Methods that can be employed in developing cognitive strategies in geography teaching.

6.0 TUTOR MARKED ASSIGNMENT

Describe how you can use questioning technique in developing cognitive strategies in the teaching of geography.

7.0 REFERENCES/FURTHER READING

Ladipo, S.O. and Ogunsanya, M. (2000). *Application and Practice in Education*. Oyo: Andrian Publication Series.

Mansaray, A. (1992). *Geography Method I, for External Studies Programme*. Ibadan: University of Ibadan.

MODULE 3

Unit I	Geography Teaching and the Development of Affective Strategies
Unit 2	Fieldwork in Geography Teaching
Unit 3	Map Work in the Teaching of Geography
Unit 4	General Pedagogical Principles in the Teaching
	Learning Process
Unit 5	Evaluation in the Teaching of Geography

UNIT 1 GEOGRAPHY TEACHING AND THE DEVELOPMENT OF AFFECTIVE STRATEGIES

CONTENTS

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
 - 3.1 The Nature of the Affective Outcomes
 - 3.2 Methods of Developing Cognitive Strategies in Geography Teaching
 - 3.2.1 Simulation
 - 3.2.2 Role Play Method
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Reading

1.0 INTRODUCTION

Just like the development of way of thinking (cognitive strategies) in the teaching of geography, affective strategies could also be developed. In developing affective strategies, the teacher's responsibility is to lay emphasis on the development of **attitudes and values**. Among the objectives of teaching geography that have been discussed in one of the previous units (unit 2 in particular) is one that states that, learners should have a

sense of responsibility toward their society, having a positive attitude to their environment and appreciating the problems of other peoples. These are essential affective strategies that involve attitudes and values that are concisely discussed in this unit.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- explain affective strategies
- describe the nature of affective outcomes in the teaching of geography
- discuss the methods of developing the affective strategies in the teaching of geography.

3.0 MAIN CONTENT

3.1 The Nature of the Affective Outcomes

In the development of affective outcomes or strategies in geography teaching, attitude and values are usually the focus of attention. Therefore, attitude could be defined as a "feeling" that one develops to a person, certain object or a situation. It is a feeling developed in somebody which influences how that person behaves in certain situation. There are major ways by which feeling is expressed viz: positive and negative ways or attitudes. For instance, I like the geography teacher because he teaches very well. This simply means that learner has developed positive attitude toward the teaching of geography. But if a learner says I hate geography because it is very wide in scope. This connotes that learners has developed negative attitude toward the teaching of geography.

Furthermore, there are two types of attitudes namely: **behavioural attitudes** and **substantive attitudes**. **Behavioural attitudes** are procedure related conduct guide, for example, the learner's use and observance of specific rules to ensure orderliness in the classrooms. The **substantive attitudes** are the positive or negative feelings associated with ideas, objects and people (Dubey, 1980). In the teaching of geography the two types of attitudes are centred on interest.

As for the "**value**" it connotes the worth or importance that we attach to something such as idea, object or particularly way of behaving. Hence, respect for the elders in our community may be regarded as a "value". However, the importance attached to the value may be based on the individuality or the community at large.

With the above explanation on the attitudes and values, it could be deduced that both are very abstract to teach thus, it is an herculean task for the geography teacher to inculcate the required attitudes and values in the teaching of geography.

The types of attitudes and values to teach in a subject like geography are rarely defined with specificity. For example, to enable learners appreciate the problems of other people or to develop a sense of responsibility toward their own society are very difficult to observe in the learners. If they are facts and information, they can be easily found out if they have been acquired or not.

However, in the geography teaching, many of these attitudes and values have to be developed such as the learners to have love for their environment, judicious utilization of their environmental resources, appreciation of the other peoples' problem among others. All these can be developed through the following strategies.

3.2 Methods of Developing Cognitive Strategies in Geography teaching

3.2.1 Simulation

It is the creation of a model of the real world in which participants assume different roles to make decisions about the issues raised as well as the difficulties encountered. It is usually designed to mirror the existing or inherited problems of man in the society. Therefore, simulation generally involves opportunities for exploration, experimentation, commitment and decision-making aimed at resolving important issues and problems affecting man in his environment.

However, if the simulation is affectively used in the teaching of geography, the learners will derive the following benefits and will also have the opportunity to:

- i. Develop insight into the issues and problems of the society.
- ii. Experience the outside world in a lively, interesting and realistic manner, within the classroom or school situation.
- iii. Become more actively involved in the teaching-learning process.
- iv. Give free expression to their creative abilities without any inhibitions.
- v. Direct and manage their own affairs by themselves.
- vi. Learn to be flexible in their thinking approach to situation.
- vii. Interact closely with one another.
- viii. Develop internal motivation for schoolwork.
- ix. Understand the nature and value of decision making in the daily lives of individuals and nations.
- x. Demonstrate and develop their qualities of leadership or followership.
- xi. Experience the simulated consequences of their decision and performance.

xii. Appreciate the need for the cooperation of others in any human endeavour. There are three types of simulation that can be employed in the teaching of geography - historical, activities and games simulations.

(a) Historical Simulation

It involves past events and real people who have lived in the past. It resembles roleplaying except that such simulations are patterned to resemble as closely as possible what happened in the past. It serves as a model of what actually happened.

(b) Simulation Activities

These are based on students playing our roles in the classroom except that such roles focus on current events in the society. Such activities present certain basic social, economic or political operations which learners study and learn through direct experiences and practices.

(c) Simulation Games

They are also called operational games. They are with a define structure and procedure which try to stimulate some real environmental process or situation in their playing. Generally, such games attempt to reveal certain basic structures in the environment by simplifying them so that attention could be paid to them. In the teaching of geography, many of these have been developed and produced commercially. For example, the jigsaws puzzle game on map of Nigeria. This game is highly educative for primary and secondary school learners particularly in teaching them the states and capitals in Nigeria. The states in Nigeria map will be dismantled, then the learners will be asked to fix them one by one at their correct locations. It is a very interesting and exciting game. Others games include "monopoly" chess, scrambles etc. These can be used in the teaching of other school subjects. For example, scrabble can be used to teach words formation and to develop vocabulary of the learners in English language

However, the following considerations should be taken cognizance of when using either locally or commercially produced simulation games in the classroom situations.

- i. Clarify in the statement the objectives for the simulation.
- ii. Proper explanation of the requirements of the simulation in terms of skills, knowledge and responsibilities to the learners and should be such that they can cope with.
- iii. The roles to be played should be determined, identified as well as purposefully and judiciously distributed among the learners.

- iv. The rules should be observed by the participants and should be simple, straightforward and very few.
- v. The procedure to be followed from the beginning to the end should be borne in mind, in that too detailed operating procedure is bound to lead to:
- (a) Loss of simplicity and easy manipulations by the participants.
- (b) A concentration on the achievement of accuracy at the expense of play ability.
- (c) A loss of freedom to explore possibilities by the participants.
- vi. The teacher should always play the role of a guardian or facilitator throughout the game.
- vii. The major concepts to be incorporated into the play for teaching-learning purpose should guide the design of the play.
- viii. The materials used for the game should be simple, handy, harmless and easy to improvise and manipulate.
- ix. The time allocated for the play should be reasonable and sufficient.
- x. Opportunity should be given to the participants to criticize any aspect of the game and to proffer useful suggestions
- xi. Evaluation of the games or play should be done at the end of the play to determine the achievement level and the reflection of the real world situation.

3.2.2 Role Play Method

It is a spontaneous dramatization of the contextual life or "total personality" of the persons or posts whose roles are being played. Therefore, it involves initiating, acting, imagining and emotional display.

The following are the benefits the learners can derive from role-playing as one of the methods to be used in developing affective strategies in the teaching of geography.

- i. It is used to enable learners appreciate the fact that the demands of a role as well as the situational characteristics of the environment within the role-played often make people to behave the way they do.
- ii. It gives learners the opportunity to express their thoughts and feelings freely.
- iii. It helps to develop cooperative attitudes and the desirable social behaviour as well as the consequences of doing otherwise in the learners.
- iv. It is also used to resolve conflicts and settle problems as well as to teach certain feelings of emotion which might be difficult for the teacher to express or demonstrate by him/herself.
 - In the geography teaching, there are good number of problems that could be treated through the use of role-playing method most especially in the teaching of

human geography. Such problems include, agricultural problems, population problems, rural-urban migration problems, industrial problems etc.

By and large, role-playing requires certain proper and adequate preparation on the part of both teacher and learners because the output quality may be affected with poorly prepared role-playing method.

SELF-ASSESSMENT EXERCISE

- 1. Explain affective strategies (check 1.0).
- 2. Describe concisely the nature of affective outcomes in the teaching of geography (see 3.1)
- 3. Mention TWO methods that can be employed in developing affective strategies in the teaching of geography. (Check 3.2.1)

4.0 CONCLUSION

In the teaching of geography, affective strategies could also be developed just like that of the cognitive strategies. The former involves the development of attitudes and values in the learners through some methods such as role-playing and simulations in the teaching of geography. However, both the teacher and the learners should prepare properly for the effectiveness of the methods in the teaching of geography or in general, teaching-learning process.

5.0 SUMMARY

You have learnt the following in this unit

- i. Meaning of affective strategies
- ii. Nature of the affective outcomes.
- iii. Methods for the development of affective strategies in the teaching of geography role-playing and simulation.

6.0 TUTOR MARKED ASSIGNMENT

Explain vividly how you can use simulation in form of jigsaw puzzle games to teach the topic "States and capitals in Nigeria" to Senior Secondary School class one students so as to appreciate the spatial land size difference among the states in Nigeria.

7.0 REFERENCES/FURTHER READING

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UNIT 2 FIELD WORK IN GEOGRAPHY TEACHING

CONTENTS

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
 - 3.1 Geography and Fieldwork
 - 3.2 Types of Fieldwork
 - 3.2.1 Field Observation
 - 3.2.2 Field Teaching
 - 3.2.3 Field Research
 - 3.3 Planning for Fieldwork
 - 3.3.1 Preparation
 - 3.3.1a Fieldwork Site Selection
 - 3.3.1b Learner's Preparation
 - 3.3.2 Administration
 - 3.3.2a Taking Permission
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 - 3.5 Follow-up Activity
 - 3.6 Advantages of Fieldwork
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
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1.0 INTRODUCTION

In the teaching of geography in Nigerian schools, fieldwork has been observed as a "sine qua non" aspect of the geography teaching because it fosters and even enhances observational skills and critical thinking ability in the learners. Therefore, the importance of fieldwork, types of fieldwork, organisation of fieldwork, and learning outcomes in fieldwork are discussed in this unit.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- define fieldwork
- describe different types of fieldwork

- mention factors to be considered when organizing a fieldwork.
- state the benefits derived from fieldwork by the learners.

3.0 MAIN CONTENT

3.1 Geography and Fieldwork

Geography Fieldwork involves the study of geographical phenomenon in the actual site (in situ) of the occurrence of the phenomena. It entails actual geographical study or work carried out in the field. It is usually any outdoor lesson which enables the learners the opportunity to observe physically and practically what they might have learnt in-door.

In the teaching of local geography, fieldwork is very essential because, learners will learn better when they are able to see physically and practically what are in their immediate environment. In fact, they will be able to have thorough knowledge of their environment.

Furthermore, in geography teaching emphasis is now on problem solving rather than the prescriptive and expository, hence, the development of such skills like observation, recording, data analysis and the use of information to solve problems are very crucial indeed. In fieldwork, all these will be properly developed in the learners.

3.2 Types of Fieldwork

There are various activities that are embedded in the fieldwork namely: field observation, field teaching and field research.

3.2.1 Field Observation

It usually takes the form of fieldtrips or excursions. This type of fieldwork affords the learners opportunity to observe physically, the phenomena that they have learnt in the classroom or it enables them to see physically and practically new things the teacher is introducing them to. Field observation enhances the development of the learners' ability to observe vividly and to familiarize with the events or phenomena within their immediate environment.

3.2.2 Field Teaching

This involves the actual teaching of an aspect of geography at the site that the examples can be found. For instance, if a teacher wants to teach a topic such as local industries in Nigeria e.g. pottery, she can take the learners to the place where pots are being produced i.e. pottery, so that the learners can observe and even collect necessary first hand

information about the pottery from the potters or pot makers. It makes teaching practical, concrete and simple because the learners will be able to see things themselves.

3.2.3 Field Research

It is usually being carried out for experimentation or testing so also for data collection. It is usually being organized on the assumption of possible explanation for a given problem under study. It is a testing ground or a laboratory for teaching idea or concept.

The learners should be properly informed that the phenomena under study is being observed or studied for a purpose, that is, illustration of more general idea, law or concept.

3.3 Planning for Fieldwork

The geography teacher needs to planning properly and carefully for a successful fieldwork to be achieved. Therefore, the following stages should be carefully planned in organizing a meaningful fieldwork: preparation, administration, on the field preparation, and follow up activity.

3.3.1 Preparation

This is divided into two stages viz: fieldwork site selection and learners' preparation.

3.3.1a Fieldwork Site Selection

The teacher should carefully select a fieldwork site that will be in line with the learners' syllabus and the site that will affords the learners the opportunities to study the significant aspect of their syllabus. The school timetable should also be considered in order not to affect other subjects while on the field. The teacher should also make sure that the site selected is related to more than one topic on the syllabus. The route to be taken to the site should also be considered, that is, in terms of distance, features, that the learners are most likely to pay attention to along the route and means of transportation available to the site.

3.3.1b Learners' Preparation

The geography teacher should prepare his/her learners properly for the task ahead during the fieldwork. The learners should not see it as an avenue for enjoyment and relaxation. They should be properly informed about the role they have to play during the fieldwork, that is, take notes, and observe all necessary features, record data, etc. In fact, the learners through an introductory lesson that the teacher organises prior to the fieldwork must know the objectives of the fieldwork.

3.3.2 Administration

This will be in two types namely taking permission and transportation arrangement.

3.3.2a Taking Permission

The geography teacher should take proper permission and authority from necessary educational stakeholders such as the parents, school and the government before going for fieldwork, particularly where it is outside the learners' locality or it involves a long journey that will take more than a day. The education stakeholders, mentioned above, should be duly informed and in fact, carried along before embarking on the fieldwork.

3.3.2b Transportation Arrangement

This is one principal problem that the teacher faces when planning for a fieldwork. The problem can however be solved with careful preparation by the teachers either gets sponsor to foot the bill, or imposes levy on the learners. If the parents and the school authority are properly and carefully being carried along, collecting levy from the learners should not pose any problem.

3.4 On the Field Preparation

The teacher should carefully and properly prepare the detail of what should be done on the field. S/He should make sure that s/he involves the learners' (activity) in the exercise through observations, measurements, maps drawings and illustrations, samples collection and categorization on the field. These activities will keep them busy and make them to realize that they are on a meaningful, purposeful and worthwhile mission.

3.5 Follow-up Activity

At the end of the fieldwork activities, the teacher should give the learners' assignment on the reporting of their observations, samples collection, drawing and illustrations in logical and systematic order. The teacher is advised to teach the lesson again so that the learners can clarify issues in the areas of confusion and difficulties encountered during the fieldwork exercises. The report written by the learners should be kept for future references and consultations.

3.6 Advantages of Fieldwork

The following are the benefits that the lessons will draw from a carefully and properly planned fieldwork.

- a) The learners are being trained in the crucial skills of keen observation, data collection and analysis through fieldwork, which are difficult to develop in the classroom.
- b) The learners are acquainted with real life situations, problems and potentials of their environment, thus they become more familiar with and have better appreciation of their environment.
- c) The learners through the fieldwork get to begin to study and interpret what is relevant to their lives.
- d) It further helps to concretize what they have learnt in the classroom, having also observed them in their actual form. This enables them to appreciate the relevance of the things to them and therefore stimulates their interest in knowing more about them.
- e) Fieldwork relieves the learners of the boredom of classroom work and stimulates the learners and in fact makes the lesson more practical and realistic.
- f) Fieldwork motivates the learners to learn and develop a more positive attitude to their environment. It encourage the development of logical and critical thinking which be a large helps the learners to develop interest in the study of geography as a discipline

SELF-ASSESSMENT EXERCISE

- 1. What is fieldwork? (see 3.1)
- 2. Mention THREE types of fieldwork. (check 3.2)
- 3. State FIVE advantages of the fieldwork to the learners. (see 3.6).

4.0 CONCLUSION

Fieldwork affords the learners the opportunity to have close observation with the geographical phenomena in their actual site of the occurrence. It involves careful preparation in terms of site selection, permission from the school, parents and government, transportation and possibly accommodation. It has the advantage of training the learners in the skills of keen observation, data collection and analysis and also stimulating them to develop keen interest in the study of geography.

5.0 SUMMARY

In this unit, you have read and digested the following

- The meaning of fieldwork
- Types of fieldwork field observation, field teaching and field research.
- Advantages of fieldwork to the learners.

6.0 TUTOR MARKED ASSIGNMENT

Describe vividly how you will organize a fieldwork for senior secondary school class one of about 30 in population to a local factory e.g. garri or cassava yam flour industry processing within the locality of a school.

7.0 REFERENCES/FURTHER READING

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UNIT 3 MAPWORK IN THE TEACHING OF GEOGRAPHY

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
 - 3.1 Map Work and Its Importance in Geography Teaching
 - 3.2 Map Work Skills and Competences required
 - 3.3 Procedure in Map Work Teaching
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Reading

1.0 INTRODUCTION

Map is a "sine qua non" tool of the geographers. It is even christened the shorthand language of the geographers. Through maps, a great deal of detail is captured and abstracted by the geographers. Maps to the geographers are indispensable tools. Therefore, map work is considered to be a very important aspect of geography teaching at the secondary school level in Nigeria. However, it is disheartening and even unfortunate that most learners develop hatred or find this vital aspect of geography difficult to comprehend. In this unit, map work as an important aspect of the study of geography and the required skills to be developed in the learners for easy comprehension are discussed.

2.0 OBJECTIVES

At the end of this unit, you should be able to

- explain the importance of the map work in the teaching of geography
- state the skills that are crucial for effective map work
- describe some strategies to be employed by the geography teacher in developing the skills in the learners.

3.0 MAIN CONTENT

3.1 Map work and Its Importance in Geography Teaching

The teaching of map work particularly map reading in the secondary school is very important because it is argued that 99 percent of geographical information could be put on map (Summer, 1964). Moreover, maps are very fundamental in a whole range of human activities such as the interpretation of weather, scientific report, historical

documentation, research report among others, (Crone, 1962). Maps help human beings to understand the history of the ages, the world we live in and the space age of the future (Wittch, 1967).

Furthermore, in all human endeavours, maps are very useful that every literate person should be able to recognize and appreciate the facts that a map conveys, reading a map as easily as a book, without consciousness of the reading process should be therefore highly desired (Thower, 1972).

Moreover, in the school curricula, other subjects such as history, social studies, government, economics, among others require the knowledge of reading and interpreting maps, therefore, the earlier the learners develop the requisite skills of map work the more they are at home in these aforementioned subjects and others not mentioned that also require map work skills.

3.2 Mapwork Skills and Competences Required

In all maps, specialized visual language is used to pass across the information to the users. This visual language is known as conventional signs or symbol or key or legend. It is this first language that the learners should begin to learn so as to be able to comprehend and interprete the map.

This learners or map users should also be able to select information because each map is peculiar with its own degree of complexity. Therefore, the map users need appropriate competence for the selection of the important features on a particular map.

Other skills that are also essential for acquisition by the learners in map work include the ability to perceive three-dimensional features depicted as two-dimensional on maps, identification of relief features on topographical maps and the ability to give a description of human activities of the area covered by the map in a simple form (Egunjobi, 1991).

3.3 Procedure in Map Work Teaching

Geography teacher should plan carefully step by step the teaching of map work. The pedagogical principle of teaching from known to unknown, simple to complex and observation to reasoning should be strictly adhered to so as to facilitate the learners' comprehension ability. Therefore, the following steps should be followed in teaching mapwork.

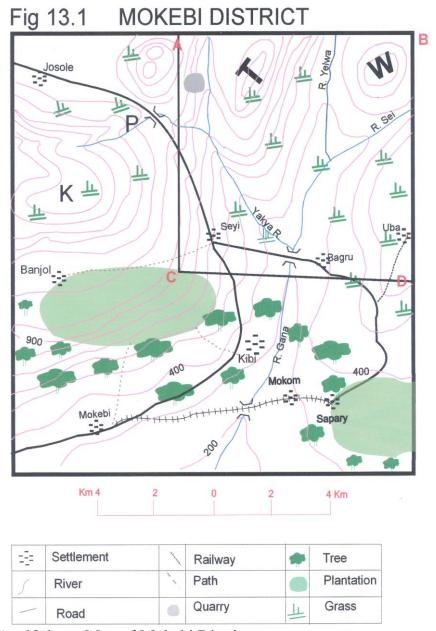


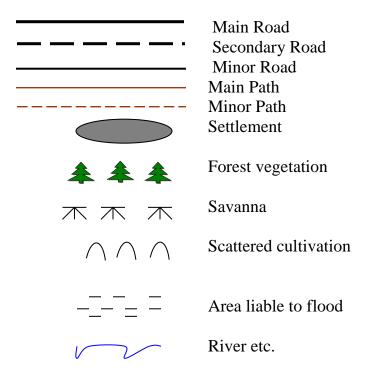
Fig. 13.1: Map of Mokebi District

Step 1: Map and the actual ground covered: The first step to teach the learners is the map as a proportion of the actual ground covered. This will be taught through the scale of the map. Any map is drawn to a scale. That is, the area mapped is being represented proportionally on the map through a scale. There are three ways of showing scale viz:

- (a) Statement scale e.g. 1cm to 1km or 1cm represents 1km.
- (b) Representative Fraction (RF) or Ratio Scale e.g. 1:100000 or 1/100,000.
- (c) Linear Scale e.g.

2 1 0 1 2 3 4 5 km
The conversion of the three ways of showing scale should be thoroughly comprehended by the learners before proceeding to another topic because it is the foundation or bedrock of the map work skill to be acquired.

Step 2: Map Basic Principles and Vocabulary: After the concept of the scale has been properly and carefully introduced to the learners, the next is the **title** and the **key** of the map. The title of the map will make it easier for the learners to read the information depicted on the map. In most cases, all maps have titles. The **key** should be introduced after the title. The key enables the learners to depict the information the map contains. The key or the legend or the conventional signs is always shown at on the bottom or sometimes right side of the map. Example of what the key usually contains are



All these signs and symbols should be carefully studied by the learners to enable field observation.

The learners should be encouraged to practise drawing the classroom plan to a suitable scale using these signs and symbols as appropriate. Others ideas such as direction, bearing, grid references, latitude and longitude etc. could also be introduced to the learners.

(See Fig. 13.1 Mokebi District). Study carefully, the title, key and the scale.

Step 3: Introduction to the Map Reading: At this point, the learners can be introduced to how to read map by visualing what the map represents. The learners should be able to visualize the landscape being represented by the map. The learners should first of all study the key/conventional symbols given on the map. This will enable them to depict the information given on the map. For instance, in studying the key at the bottom of the Fig. 13.1 Mokebi District map, the following information could be depicted that is, settlements, river, road, railway, footpath, quarry, forest, plantation and grassland are present on the map. The learners should be taught how to depict the height of the contour lines and the different contour forms of relief features such as the valley, spur conical hill, knoll, plateau, cuesta, saddles or col among others. The common contour lines of these features should be treated with the learners. The learners also should be taught on how to reduce or enlarge the map.

Step 4: Interpretation: This is the next stage and in fact, the final stages in the map work. It is the stage when the learners have to make use of their highest level of cognition to infer information and adduce reasons for the presence of certain phenomena on the map. It is the most technical and abstract aspect of map work which requires critical thinking from the learners.

However, with careful planning, the geography teacher can teach the aspect effectively although, it needs great deal of imagination and resourcefulness. Therefore in interpreting any topographical map, the following aspects should be treated with the learners.

- i. The topographical features or relief on the map that is, the low land and highland areas of the map
- ii. The drainage system on the map, that is, the main river with its tributaries on the map.
- iii. The settlement patterns, functions and hierarchy in terms of their complexity or vice-versa.
- iv. The communication networks on the map e.g. roads, railway, paths, waterways, and airways.
- v. The vegetation types e.g. forest, savanna, scrub, scattered cultivation etc.
 All these aspects and how they can be interpreted on the map should be carefully explained to the learners.

SELF-ASSESSMENT EXERCISE

- 1. Explain the importance of the map work in the teaching of geography (See 3.1)
- 2. Describe the strategies that can be used in teaching map work in geography (See 3.2)

4.0 CONCLUSION

Map work is an integral aspect of geography teaching because, maps to geographers are essential tools. They are varied types viz: topographical maps, atlas, aerial photographical maps etc. However, for an effective map work teaching to occur certain steps should be followed such as teaching of the scale first, followed by title key, map reading and interpenetration.

5.0 SUMMARY

The following have been treated concisely in this unit:

- i. The importance of the map works in the geography teaching.
- ii. The strategies in the teaching of geography.
- iii. The procedure for teaching of map work.

6.0 TUTOR MARKED ASSIGNMENT

Use Fig. 13.1, Mokebi District to answer the following questions

- 1a. Comment briefly on the effects of relief on:
- i. Settlement
- ii. Communication
- iii. Drainage
- iv. Vegetation
- b. Identify the features lettered A, P, T, W on the map.

7.0 REFERENCES/FURTHER READING

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UNIT 4 GENERAL PEDAGOGICAL PRINCIPLES IN THE TEACHING LEARNING PROCESS

CONTENTS

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
 - 3.1 Necessary Conditions for the Effective Teaching and Learning
 - 3.2 Major Roles of the Teacher in the Classroom
 - 3.3 Teaching Skills
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Reading

1.0 INTRODUCTION

In any subject, there are general pedagogical principles that the teacher should observe for the teaching learning process to be effective. Therefore, as a geography teacher, these principles are equally necessary and important to be considered for effective and meaningful geography teaching. In this unit, some of these principles are discussed.

2.0 OBJECTIVES

At the end of this unit, you should be able to

- highlight the conditions necessary for the effective teaching and learning process
- explain the major roles of the teacher in the teaching-learning process
- describe some of the teaching skills that can be used by the teaching in the classroom.

3.0 MAIN CONTENT

3.1 Necessary Conditions for the Effective Teaching and Learning

There are certain pedagogical principles that the teacher must prepare for, in the teaching-learning situation for its effectiveness. These conditions must be created in the classroom or during the instructional process for effective and desirable learning to occur. They include

- i. Motivate the learners toward the achievement of the objectives stated for the lesson: The teacher should try as much as possible to motivate the learners towards the realization of the state objectives for the lesson. Applying teaching skills such as "set induction" in which the teacher asks stimulating and thought provoking questions could do this. So also, instructional materials could also be displayed at a conspicuous location in the classroom to arrest the learners' attention and so on. By so doing, the learners will be able to realize the purpose of the lesson being taught.
- ii. Stimulate the learners' interest by presenting the instructional materials in appealing manner: The teacher should present his/her lesson with clarity, logical and sequential. This will stimulate and also arouse the learners' interest, thus enhancing their performance.
- iii. Learners should be involved in the problem-solving activities: Always engage your learners in activities that will lead them to discover things themselves. Let them find out things on their own. This will prepare them for the challenges in life, how they will proffer solutions to those challenges and become overcomers. Learners should be more active than the teacher. Eclectic teaching methods should be adopted such as problem-solving techniques, questioning method, discussion method, and discovery technique among others.
- iv. Be learner-centred in your teaching: The teacher should consider his/her learners' individual differences. Learners' ability, age, gender, home background, class size and learning disabilities should be taken cognizance of by the teacher during the teaching-learning process. For instance, in distributing his/her questions during the course of teaching, the three major groups of learners in a typical classroom situation viz: the overachievers, mediocre and underachievers should be properly catered for. Questions asked by the teacher should be evenly distributed among these three groups of the learners. Let individual learner learn at his or her own rate. However, in a large population of learners, where individuality may be difficult to consider, peerteaching approach should be employed. That is, the overachievers can be used to teach the other two groups under the teacher's supervision.
- v. Make use of appropriate, quality and suitable instructional media in your teaching. The teacher should utilize learning materials that are of good quality in terms of lettering and durability. The media should be appropriate and suitable for the topic to be taught. For instance, in teaching topic like Ways of showing scale in geography map work, topographical maps will be more

appropriate as instructional media to be used. And it is advisable to give a topographical – map to each learner.

3.2 Major Roles of the Teacher In The Classroom

In the teaching-learning process, the teacher performs four major roles viz: planning, organizing, leading and controlling.

- **i. Planning:** The teacher plans his/her lesson note properly before going into the classroom. The instructional materials are also selected in consonance with the objectives stated for the lesson. The planning is done toward the realization of the objectives stated for the lesson.
- **ii. Organizing:** The teacher organizes his/her classroom properly so as to make it enabling and conducive for effective learning. The seating arrangement gives room for free and easy movement of the learners. The classroom is well ventilated and adequately illuminated.
- **iii. Leading:** The teacher leads the learners to discover things themselves. The discussion is learner-centred and not teacher dominated. Different teaching methods and skills are employed to teach the learners in finding out things on their own. Learners are more active than the teacher.
- iv. Controlling: The teacher controls his/her classroom so as to maintain proper discipline among the learners. In controlling the class for effective discipline and management, the following should be considered by the teacher
 - Be well composed and avoid anger.
 - Be master of your subject
 - Avoid personal mannerism speech, over-gesticulation etc.
 - Create tension free classroom atmosphere.
 - Show love and affection to your learners.
 - Avoid too much familiarity
 - Use variety of methods and instructional materials during lesson presentation.
 - Offer opportunities for responsibilities.
 - Always use positive statement on your learners e.g. very good, you can do better, try more etc.

However, apart from the afore-listed points, the teacher can still consider the following in improving the teaching-learning process.

- Proceed from simple to complex
- Proceed from known to unknown
- Proceed from concrete to abstract
- Proceed from observation to reasoning.
- Reinforce and motivate learners.
- Integrate systems approach in the planning and delivery of your lesson.
- Avoid introducing threat/fear into the classroom e.g. avoid the use of cudgel as much as possible.
- Possess sound knowledge of the subject matter.
- As much as possible, eliminate all forms of communication noise factors physical, psychological, physiological and linguistic factors so as to maintain and sustain effective communication process.
- Acquire competency in the use of teaching skills such as set induction, stimulus variation, questioning, use of illustrations and examples, non-verbal communication and closure skills among others.

Some of these teaching skills will be discussed concisely in this unit.

3.3 Teaching Skills

These are specialized ways of doing things. Every profession has its own unique skills which are expected to be acquired and put into use by its practitioners. Therefore, teaching is no exception. The following skills are required to be acquired by the pedagogically trained teachers.

- a. Set induction
- b. Stimulus variation
- c. Non-verbal communication
- d. Questioning
- e. Closure
- f. Use of instructional materials
- g. Evaluation
- h. Reinforcement
- i. Planned repetition
- j. Use examples and illustrations.

(a) Set induction skill

This is the skill that the teacher uses to get learners' undivided attention, arouse their interest and prepare their minds for the task ahead in the lesson. In fact, it has to be established that, if the teacher succeeds in creating a positive set induction the likelihood of learners' involvement in the lesson will be enhanced.

In applying set induction skill in the classroom, the following situation should be watched out for: noise making, inattention and bored look. However, developing and practising the following skills during set induction can normalize these situations:

- i. Ask stimulating and thought provoking questions.
- ii. Keep repeating your introductory remarks until you have gained learners' attention.
- iii. Simply stand in front of the class without uttering a word particularly on a noisy situation.
- iv. Start talking in an unusually low voice and gradually raise your voice to normal volume when the class is quiet and attentive.
- v. Moderate gesticulations.
- vi. Display instructional materials e.g. charts, models, realia etc. conspicuously in the class and solicit for learners' reaction on the displayed media.
- vii. Start your lesson by relating it to a topic of vital interest to the learners.
- viii. Put up a hard look in the class and keep gazing to all directions.

(b) Stimulus Variation Skill

This skill involves the use of gestures, focusing attention, varying interaction styles, using pauses, shifting sensory channels and using teacher's movement.

The teacher in two ways can demonstrate focusing attention viz: verbal statements and gestures. Verbal statements are statements referred by the teacher to emphasise points to the learners e.g. "this is an important point class", "pay close attention to this point" "study this map or diagram well" etc. Gestures are the actions demonstrated by the teacher in the class e.g. teacher claps, raises his head, squeezes his face and shakes his head etc. to emphasise certain points to the learners.

Varying Interaction Styles

In the typical classroom situation, the teacher can vary his interaction styles with the learners in four ways thus teacher-group, teacher-learner, learner-learners and learner-group.

Pauses

These are temporary stoppage in communication by the teacher during his/her lesson presentation. However, for proper mastery of the pauses skills, the teacher should consider the following:

- i. Break the lesson context into smaller units
- ii. Be time conscious
- iii. Never dominate the discussion
- iv. Watch the faces and reactions of the learners during delivery etc.

Shifting sensory channels

Sensory channels are the five major senses viz: visual, auditory, tactile, olfactory and gustatory that is, seeing, hearing, touching, smelling and tasting respectively. The teacher should cater for all these senses during teaching-learning process. Shifting sensory channels can be developed by considering the following points.

- i. Develop the use of multi-media approach that is, use combination of media e.g. visual, audio and audio-visual in a particular lesson.
- ii. Eliminate all forms of "noise factors" in the classroom situation e.g. physical, psychological, physiological and linguistic factors.

Teacher movement

Teacher's movement in the classroom directs learners' attention and focusing. The movement also shows the level of feelings and affection for the learners. The teachers can move right or left, back or front and even among the learners in the class. The teacher's movement fosters cordial relationship and interaction between the learners and the teacher.

(c) Non-Verbal Communication Skills

These are skills that involve facial expressions, body movement, space and motion message and time message. All these are very important in the classroom situation for effective teaching and learning process.

Facial Expression

The face is a powerful medium of communication. A smiling face soothes the learners than a stern look. Approval and disapproval of learners' behaviour during the instructional process can be expressed not only through verbal language but quite often through the use of the facial message. In the classroom situation, facial expression can be expressed to connote such virtues like hatred, love, fear, quilt, approval, disapproval, confidence, supports and surprise.

Body Movement

The body can be used to communicate message through the way it is used. In fact, through the body movement, intentionally demonstrated actions in form of gestures can convey a lot of message. Gestures through hand, head, arms, fingers and trunk can provide learners with a lot of information. However, gestures should not be over-utilized so as not to turn the classroom to an art theatre where the learners pay attention more on the gesticulations rather than the intended message.

The Space and Motion Message

This connotes that the teacher makes use of the available space in the classroom and his/her movement within the four walls of the classroom. In fact, a neatly and well arranged seats with defined rows tell some salient but clear messages to the learners. Indeed, the physical make up of the learning environment creates moods and affects the interaction within the environment. The teacher's movement towards the learners, touching and patting them symbolizes expression for feeling of love and affection.

The Time Message

As teachers, you should be careful the way you distribute time in any given lesson. Time allocated to a lesson should be judiciously utilized. It is unethical for a teacher to have finished a lesson of 35 minutes within 15 minutes. It is equally unprofessional to extend your lesson without any concrete evidence.

(d) Closure Skills

The concluding portion of the lesson marks the stage where the lesson is gradually closed. The teacher's and learners' activities at this stage of the lesson constitute the "closure skills". These activities are called different names such as recapitulation, revision, review, evaluation, summary, conclusion, etc.

However, in closing a lesson effectively and meaningfully, teacher's activities should include:

- i. Moving round to see the work written by the learners.
- ii. Checking the exercises done by the learners
- iii. Asking questions that will cover the major points discussed during the lesson.
- iv. Demanding for questions from the learners etc.

(e) Planned Repetition Skill

It is an action that has taken place before, and it is reoccurring occurred at least once again. When it is zero-in teaching-learning process, repetition implies

- i. The frequent reoccurrence of statements in the classroom.
- ii. Frequent reintroduction of the same instructional materials.
- iii. Any form of re-teaching of a particular lesson which has been taught before.
- iv. Frequent restatement or re-mention of particular salient points during the lesson. This may be in form of communication redundancy.

By and large, repetition can be planned during a lesson when

- (a) Any uncontrollable circumstance brings a lesson to a close prematurely or untimely e.g. rainstorm, etc.
- (b) Teacher discovers through evaluation that a portion of the stated objectives of the lesson has not been achieved.
- (c) Teacher sees the need to emphasise an aspect of the lesson as against the other aspects.
- (d) Teacher intends to revise or review the lesson probably in preparation for an examination.

Other skills such as, the use of examples and illustrations, reinforcement, questioning, evaluation and the use of instructional materials have been treated in the previous units discussed.

To sum up, all these skills are needed to be employed and effectively utilized by any teacher for a meaningful and effective teaching-learning process particularly geography teachers.

SELF-ASSESSMENT EXERCISE

- 1. State the necessary conditions for the effective teaching-learning process.
- 2. Describe the four major roles of a teacher in the classroom situation.
- 3. Explain FIVE teaching skills that a geography teacher should employ and utilize for effective geography teaching and learning process.

4.0 CONCLUSION

In any pedagogical practice, certain principles should be considered by the teacher so as to make teaching learning effective. Such principles include proper mastery of the subject matter by the teacher, stating the objectives in clear terms with observable and measurable verbs, be learner-centred in your teaching, proceed from simple to complex, known to unknown among others. Teacher's dominant roles in the teaching-learning situation include planning, organizing, leading and controlling. Teaching skills such as set induction, stimulus variation, planned repetition, closure, questioning etc. are also equally important for the teacher to utilize effectively in the classroom situation for meaningful and effective learning to occur.

5.0 SUMMARY

You have read and digested the following in this unit,

- (i) Some of the pedagogical principles to be considered by the teacher for effective teaching and learning process.
- (ii) Teacher's dominant roles in the classroom situation.
- (iii) Teaching skills for effective teaching learning process.

6.0 TUTOR MARKED ASSIGNMENT

- 1. In the teaching of geography, mention four prominent roles of the geography teacher for effective teaching-learning process.
- 2. Explain concisely, the teaching skill you will use to end your lesson in the teaching of geography.

7.0 REFERENCES/FURTHER READING

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UNIT 5 EVALUATION IN THE TEACHING OF GEOGRAPHY

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1.0 INTRODUCTION

In any teaching-learning process, the last stage is to know the outcome of the learning. This is done usually through evaluation. Evaluation is determined in consonance with the stated objectives for a particular lesson so as to know whether the objectives have been achieved or not.

Evaluation also reveals the effectiveness of the teacher's inputs into the instructional process, in terms of his/her teaching methods, the instructional media utilized, the

instructional environment among others. In this unit therefore, types of evaluation techniques that geography teachers can use and reasons for evaluation are discussed.

2.0 OBJECTIVES

At the end of this unit, you should be able to

- explain the relationship among the terms "testing", "measurement", "assessment" and "evaluation".
- mention types of evaluation
- describe the evaluation techniques that a geography teacher can utilize.

3.0 MAIN CONTENT

3.1 Relationship among Testing, Measurement, Assessment and Evaluation

Testing is the act of giving a stimulus in order to elicit a response. Stimulus here simply means the question(s) being asked while response refers to the answer provided for the question. It shows the learners' performance qualitatively.

Measurement is a systematic assignment of numbers to objects or events. It connotes that measurement is only for quantification. It is carried out by means of measuring instruments e.g. ruler, tests, questionnaire etc. It indicates the learners' performance.

Assessment is the process of investigating the status of an individual or group usually with reference to the expected outcome. It deals with both quantitative and non-quantitative description of events. It shows the levels of the learners' improvement.

Evaluation is akin to passing of value, judgement after a logical consideration of a number of measurements. It connotes that evaluation provides the basis on which a meaningful decision can be taken.

Meanwhile, from the above definitions, the relationship among the four terms is that, they compliment each other and in fact, they are essential components of a process. That is, test can be used to assess, measure and evaluate. This simply means that, evaluation embraces all other terms, testing, assessment and measurement.

3.2 Types of Evaluation

Evaluation can be divided into two basic types viz: formative and summative evaluation.

3.2.1 Formative Evaluation

Is a progressive and continuous exercise in discovering or identifying the learning problems of a learner with the intent of rectifying them immediately e.g. the evaluation that a teacher carries out within and/or after his/her lesson.

3.2.3 Summative Evaluation

It is the evaluation that comes at the end of a particular academic program. It is used to judge the overall learners' performance at the end of an instructional programme. Usually, it aims at certification. It is used by the school authority or the examining bodies viz: West African Examinations Council (WAEC), National Examinations Council (NECO) National Teachers' Institute (NTI) etc.

3.3 Evaluation vis-à-vis Specific Objectives

In any teaching-learning process, the specific or instructional or behavioural objectives stated would guide the teacher on how to carry out the evaluative exercise on the learners. The feedback from the exercises carried out will determine whether the objectives stated have been achieved or not.

However, there are different domains to which these objectives can be stated namely; cognitive, affective and psychomotor domains.

(i) The cognitive domain

It includes objectives that deal with recall of knowledge and the development of intellectual abilities. It involves remembering, understanding and thinking (Educational Testing Service, 1977). Bloom (1956) divided these into six categories – knowledge, comprehension, application, analysis, synthesis and evaluation respectively.

- (ii) The Affective Domain: This deals with feelings, receiving, responding, valuing etc.
- (iii) The Psychomotor Domain: This deals with manipulative skills and perception.

3.4 Function of Tests

Tests are used for

- (a) Pre-assessing the learners' ability
- (b) Serving as incentives to learners
- (c) Selecting purposes
- (d) Making decision on curricula
- (e) Diagnosing learning difficulties
- (f) Monitoring learners' learning progress
- (g) Indicating to the learners how s/he is progressing
- (h) Supplying information to parents/guardians
- (i) Obtaining information on the quality of teachers' instruction.

3.5 Types of Tests

There are many types of test available for use by teacher. The choice of test by the teacher depend on a number of factors among which is the use to be made of the test is very important. Usually, teachers select tests to suit their proposed intentions.

However, the following are some of the common tests employed by the teachers

- **i. Achievement Test:** It is designed to measure how much a learner has learnt over a period of time or from a course of study. An achievement test is usually prepared on a single subject area on a course.
- **ii. Aptitude Test:** It is used to predict the possible future performance of the learners in some activities or training. The rest of the test indicates the learners' ability to learn new tasks or to benefit from a course of study. It is often used for selection purposes.
- **Diagnostic Test:** It is designed to find out the cause of learners' persistent learning difficulties that are not solved by formative evaluation. A plan of remedial action is formulated once the root causes of the learning difficulties are discovered.
- **Placement Test:** It is used to ascertain that the learner possesses the required entry behaviour for a higher level of learning. It determines the learner's level of achievement prior to the commencement of a course. It is also referred to as "pretest".
- v. Intelligence Test: It is used to measure individual level of educability. It is usually used to predict achievement in different areas of learning.

Other types of test are speed test, power test, criterion-reference test, standardized test, norm reference test, and teacher-made test.

3.6 Construction of Test

In constructing test, three major stages have been identified viz planning, item writing and item analysis.

- **3.6.1 Planning:** The following steps should be followed systematically when planning to construct a test
- i. Specifying the purpose of the test: This specification enables the tester to select the context and gauge some of the characteristics of the tests e.g. the difficulty and discriminating indices
- **Defining objectives of instruction:** By defining the objectives of the instruction, it assists the test developers to select samples of appropriate behaviours to be tested in the learners.
- **iii. Context Specification:** The outline of the content of instruction to be covered by the test should be specified so as to enable the tester judge.
- **iv. Preparation of the Test Blueprint:** In a typical test blueprint, the topic are set along one side of the table while the process objectives are set along the other dimension of the table. Test blueprint relates the contents to the objectives of the test. Table 15.1 shows a typical test blueprint or otherwise referred to as table of specification.

Table 15.1: Table of Specification (Test Blueprint)

Content	Process objectives				
	40%	30%	30%		
Topic	Remembering	Understanding	Thinking	Total	
Local Geography 35%	15	10	10	35	
Solar System 35%	15	10	10	35	
Earth's Anatomy 30%	10	10	10	10	
Total 100	40	30	30	100	

(v) Selection of the Appropriate Test Format

There are two test formats for the tester to select from viz essay and objective formats. Once the tester has selected an appropriate test format the next stage is the item writing.

3.6.2 Item Writing in Test Construction

In writing test items, there are those stages namely: item writing, items editing and test administration and scoring.

- **3.6.2a Item Writing:** This should start early during the period the subject or course is taught. The number of test items prepared for each content area should be more than the actual number of test items required for the test. The layout of the test items should also ensure that the test has a focus.
- **3.6.2b Item Editing:** Editing is done mostly to correct the mistakes that might have be committed during the test construction. This can be done by another person who has the knowledge of test construction or writing or by the tester him/herself. At this stage, the test can be pre-tested or trial-tested.
- **3.6.2c Test Administration and Scoring:** The test should be administered to the individual testees under equal opportunity to perform. The tester should control maximally factors that can render the test invalid e.g. quiet and serene atmosphere, thorough supervision, comfortable seats, adequate workspace, clear instruction and well-illuminated room.

Test scoring requires great care particularly if it is essay format. It is advisable to use multiple scores or analytical marking approach for essay test, for objective test, scoring is easily done moreso they require precise answers.

- **3.6.3 Item Analysis Stage:** In analyzing test items, the following can be undertaken
- (i) Content Validity: It is determined by giving the test items and the course content or syllabus to the expert in the course subject for criticism and thorough scrutiny.
- (ii) Item Difficulty Level: This is computed as the proportion of the testees that get the item right on the total testees that attempted the item. It is calculated thus $DI = R/T \times 100/1$

Where \mathbf{D} Is the Difficulty Index

R is the number of testees who got the item right

T is the total number of testees that attempted the item.

The greater the difficulty index, the easier the test item. For instance, difficulty indexes of two test items 1 and 2 are 60% and 70% respectively. Therefore, item 2 with 70% difficulty index is easier to answer for the testees than item 1 with 60% (Example see table 15.2)

Table 15.2: Computation of Item Difficulty Indices

Items	R	Т	Difficulty	%
			Index	
1	60	100	.6	60
2	70	100	.7	70
3	50	100	.5	50
4	40	100	.4	40
5	80	100	.8	80

(iii) Item Discriminating Power: This is calculated thus

 $\mathbf{DP} = \underline{\mathbf{R}_{\underline{u}} - \mathbf{R}_{\underline{L}}}_{\frac{1}{2}\mathbf{T}} \qquad \text{(the contrasting interior group method)}$

DP = the discriminating power

 $\mathbf{R}_{\mathbf{u}}$ = the number of testees in the upper group who got the item right

 $\mathbf{R}_{\mathbf{L}}$ = the number of testees in the lower group that got the item right.

 $\frac{1}{2}$ T = one-half of total number of testees who responded to the item.

Table 15.3 shows example of the computation of discrimination index using contrasting criterion group method.

Table 15.3: Computation of Discrimination Index using the Contrasting Criterion Group Method

Item	U	L	Discrimination	%
			Indices (R _u –	
			$R_{L})/\frac{1}{2}T$	
1	7	5	.05	5
2	41	18	.56	56
3	34	9	.61	61
4	21	18	.07	7
5	25	6	.45	45

The greater the discrimination index, the greater the number of testees that discriminated the test items. For instance, from table 15.3, test item 3 has the greatest discrimination power, hence the item should be modified or dropped.

3.7 Types of Test Formats

The teacher in the teaching-learning process can employ two major types of test formats. They are the objectives and essay tests.

- **3.7.1 Objective Tests:** These are of various formats namely
- (a) Completion Format: The testees are asked to provide phrase, word or sign to complete a sentence or phrase
 e.g. (i) The earth revolves round the sun in _____ days
 8.0 _____ is the largest planet in the solar system.
- **(b) Alternative Response Format:** In this format, the testees are to support or oppose declarative statements. Two options are usually given in this type of format e.g. Yes/No, True/False. For example
 - (i) Lake Chad is an inland drainage: Yes/No
 - (ii) Lokoja is a nodal settlement True/False
- **Arrangement Format:** In this format, the testees are asked to arrange words, symbols, letters, figures etc. teased on a specified criterion e.g. arrange the following settlements in their order of complexity of functions: metropolis, megapolis, conurbation, hut, city.
- (d) Matching Format: In this format, there are usually two column. The testees are to match the options in column A to the appropriate option in column B e.g.

	Column A	Column B
i	A confluence town in Nigeria	Latitude
ii.	Largest planet in solar system	Uranus
iii.	Parallel lines	Lokoja
iv.	Meridians	Cape Verde
v.	A planet with longest orbit	Jupiter
vi.	A unique planet in the solar system	Pluto
vii.	An archipelagoes	Longitude
		Niger Rep.

(e) Multiple Choice Format: This consists of an introductory statement which poses the problem known as the "stem". The stem may be a question, statement, direction, phrase etc. for which answers are given. The correct option among the multiple options given is known as the "key" while others are referred to as distractors, decoys or wrong responses For example

- (i) Which is the planet with the shortest orbit?
 - (a) Earth
- (b) Mars
- (c) Mercury
- (d) Pluto
- (ii) All of these are sedimentary rock EXCEPT
 - (a) clay
- (b) marble
- (c) limestone (d) sand

Hints on Setting Objectives Test

- (i) The question on problem should be clearly stated in the stem
- (ii) Avoid placing the correct option in the same letter position.
- (iii) Only one option should be the correct answer
- (iv) To avoid guessing by the testees, all options should look plausible

3.7.2 Essay Tests

It is a form of test that requires responses in the form of continuous writing and the testee is free to decide on what to be included in the responses. They are two types viz:

- (i) Short Answer Essay Format: The testees are asked to write concisely on a number of topics or questions. In some cases, the length of the responses is specified e.g.
- (a) Mention FOUR effects of the earth's rotations
- (b) Define environmental hazard.
- (ii) Extended Answer Essay Format: The testees in the format are asked to write copiously or extensively on the questions given:
- (a) Describe the formation and characteristics of a Water Fall.
 - (b) With the aid of an annotated diagram, explain the hydrological cycle.

Hints in Setting Essay Test Format

- (i) Be specific in your setting of the question
- (ii) Number of questions to be attempted and the time allocated should be reasonable enough.
- (iii) All testees should be required to answer as much as possible the same number of questions for uniformity sake.

3.8 Evaluating Affective Domain

Just as the cognitive domain of the learners can be evaluated, the affective domain particularly attitudes and values can also be measured.

One of the ways in measuring learners' attitude is through the use of attitude scale. This type of scale consists of statements to which a learner is required to respond. From the responses given, judgement can be passed whether or not the learner possesses the attitudes in question. Example is given below.

Learners' Attitude Questionnaire on Map work in Geography (LAQMGP) Dear respondents,

Please, tick the appropriate column inline with your response. The information given will be treated with confidentiality

SA = Strongly Agree

A = Agree D = Disagree

SD = Strongly Disagree

S/N	Item	SA	A	D	SD
1	I enjoy reading mapwork textbooks				
2	I hate map reading				
3	I always score very high in mapwork				
4	My score is not always encouraging in				
	mapwork				
5	I love staying in mapwork class.				
6	I always run away for mapwork lesson				

Scoring: This should be done in line with the positive and negative statements. For the format SA is 4, A is 3, D is 2 and SD is 1. At the end, add all scores for a particular learner together, this represents the learners' rating on the attitude scale.

Hints on the Preparation of Attitude Scale

- (i) Put both positive and negative statements evenly
- (ii) To find out learners' consistency, put both statements in positive and negative forms. You may, do not write them immediately after each other.
- (iii) Let the attitude scale be concise with reasonable number of items so as to avoid boredom in the respondents.

SELF-ASSESSMENT EXERCISE

- 1. Differentiate between
- (a) Testing and measurement (see 3.1)
- (b) Assessment and evaluation (see 3.1)
- 2. Mention **two** types of evaluation (see 3.2)
- 3. State **five** functions of a test (see 3.4)
- 4. Describe **two** major evaluation techniques that can be used by the geography teacher (see 3.6)
- 5. Explain how learners' attitude can be measured in geography teaching (see 3.8)

4.0 CONCLUSION

Testing, measurement, assessment and evaluation are complimentary in nature. In fact, evaluation embraces the other three processes. Therefore, formative and summative evaluations are two major types of evaluation that can be employed in the teaching-learning process.

Objectives and essay type tests are two main evaluation techniques that the class teacher or subject teacher can utilized in his/her teaching to evaluate the learners' performances. For affective domain, particularly attitude, attitude scale e.g. questionnaire can be used to measure the learners' attitude.

5.0 SUMMARY

In this unit, you have learnt the following

- i. Relationship among testing, measurement, assessment and evaluation
- ii. Types of Evaluation
- iii. Functions of Tests
- iv. Evaluation Techniques
- v. Attitudinal Scale

6.0 TUTOR-MARKED ASSIGNMENT

Construct an attitudinal scale on students' attitude toward the teaching of geography. Use four Likert format SA, A, D, SD. Balance your items with five positive statements and five negative statements.

7.0 REFERENCES/FURTHER READING

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