

UNIVERSITY OF IBADAN



THIS THESIS SUBMITTED BY

DR. ABODUNRIN Gabriel Oyerogba

WAS ACCEPTED IN PARTIAL FULFILMENT
OF THE REQUIREMENTS FOR THE
DEGREE OF DOCTOR OF PHILOSOPHY
IN THE INSTITUTE OF EDUCATION

OF THIS UNIVERSITY
THE EFFECTIVE DATE OF THE AWARD IS

28th February, 1996

9th Feb. 1998
DATE


SECRETARY
POSTGRADUATE SCHOOL
UNIVERSITY OF IBADAN

EFFECTS OF NOTE-TAKING STRATEGIES, ATTITUDINAL
DIFFERENCES AND SOME PERSONALITY TRAITS
ON STUDENTS' ACHIEVEMENT IN SOCIAL STUDIES

BY

GABRIEL OYEROGBA ABODUNRIN

B.Ed. (Ibadan)

M.Ed. (Ibadan)

A THESIS SUBMITTED TO THE INSTITUTE OF
EDUCATION IN PARTIAL FULFILLMENT OF
THE REQUIREMENT FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY OF
THE UNIVERSITY OF IBADAN

1995

A B S T R A C T

EFFECTS OF NOTE-TAKING STRATEGIES, ATTITUDINAL DIFFERENCES
AND SOME PERSONALITY TRAITS ON STUDENTS' ACHIEVEMENT IN
SOCIAL STUDIES

This study employed a 3x2x2 pretest-post test control group factorial design to investigate the effects of note-taking strategies, attitudinal differences and some personality traits on students' achievement in Social Studies. The subjects of the study were 96 first year Social Studies students of three Colleges of Education in Oyo and Osun States of Nigeria.

Two experimental and one control groups were used. The first experimental group listened to taped lecture and wrote their own notes. The second listened to the taped lecture and followed lecturer's prepared notes while the control group listened only to audio-taped lectures on population studies. The Eysenck Personality Inventory (EPI) and the Students' Attitude to Social Studies Questionnaire (SASSQ) were utilised to categorize the subjects into extroverts and introverts, and

to those with positive or negative attitude to social studies. Without any opportunity to review notes, subjects were made to take two post-tests - Social Studies Immediate Recall Test (SSIRT) and Social Studies Delayed Recall Test (SSDRT).

Three dependent measures which were obtained for each subject

were the pretest score, the immediate post-test score and the delayed post-test score. Data obtained were analyzed using Analysis of Covariance while Tukey Honestly Significant Difference

tests were used for post hoc tests.

The highlights of the results include the following:

- (1) There were statistically significant differences in the students' achievement on the basis of the different note-taking strategies adopted at both the immediate and delayed recall tests. Both the note-takers and note followers had significantly higher scores than the control group.
- (2) There were no statistically significant interactive

effects of note-taking strategies and attitudinal differences on the students immediate recall test but there were statistically significant differences at the delayed recall test.

- (3) There were no statistically significant interactive effects of note-taking strategies and personality traits on the students' achievement at both the immediate and delayed recall test.
- (4) There were no statistically significant interactive effects of note-taking strategies, attitudinal difference and personality traits on students' achievement at both the immediate and delayed recall tests.

The results are consistent with the idea that note-taking can be a generative activity that encourages students to build connections between lecture information and what they already know. This is one of the implications of the findings. Other implications were:

- that, rather than indulging in writing notes on the blackboard or in handouts for our students, they should be taught how to encode accurately lecture information during lecture;

- that sufficient practice in note-taking should be given to our students right from the lower levels of education;
- that whether a student is extrovertic or introvertic in his personality disposition, his achievement in social studies depends more on the type of note-taking strategy he adopts during class lectures;
- that positive attitude to learning enhances better remembering and recall.

Suggestions were also made for further studies in the area of the research.

UNIVERSITY OF IBADAN LIBRARY

DEDICATION

This work is dedicated to God who is the author of all things, to my parents who diligently catered for me, to my wife who bore the brunt of my constant absence from home, and my children whose rights and privileges to paternal cares were hung on the cross of this project

UNIVERSITY OF IBADAN LIBRARY

ACKNOWLEDGEMENT

I sincerely express my profound gratitude to God Almighty for his bountiful blessing and mercies, for the grace he bestowed on me and for His unshaken guard, guide and protection throughout the period of this study. The completion of this study would not have been possible if not for His assured grace and succor in the very difficult period. To God be glory and adoration.

My sincere gratitude also goes to my supervisor, Doctor Tolulope W. Yoloye who saw me through the whole exercise. It is through his brotherly love, genuine advice and encouragement that this project reached the present stage. He was the moving spirit behind the onerous task and it was his continual broad smile and reassuring encouragement that gave me the impetus to continue this work. He was definitely more than a supervisor to me.

I also wish to say a big thank you to Dr. Bolaji Ogunsanya, Dr. N.P. Okpala and Dr. O. Onocha for their assistance and encouragement. Their indispensable assistance was contributory to the completion of this study. May the Lord continue to bless them.

In no small measure, I wish to acknowledge the assistance and the words of encouragement I received from my colleagues and co-workers in the School of Education, St. Andrew's College of Education, Oyo. The names of Messrs Iyiola, Oluokun, Ladipo, Oyewobi and Doctors, Omideyi, Adelodun, Adeyanju and Teju Ojo deserve special mentioning. Their constant prompting, advice and moral and financial assistance probed me in my hours of need.

I really appreciate the contribution of Mr. Akin Adetunji, who read through the project several times to advise on the language of writing; Mrs. Medinat Oyedeji and Mr. Tijani who did all the typing aspects throughout the programme.

I am particularly grateful to all the members of my family. They bore the burden of my depriving them of my fatherly care and assistance during the long period I spent on this project. My old mother, Omonike Ajinhun, my wife Funmilayo Adenihun, my sons Olufemi, Abimbola, Babatunde, Oluwasayo, Olugbenga and Abiodun, and my daughters Folasade, Funmilola, Foluke and Odunayo, all deserve my thankfulness.

My darling daughter late Omolara Oluwakemi Oyeboade can never be forgotten. Her short but memorable life would ever be remembered. May her soul rest in perfect peace.

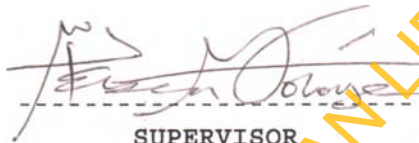
Lastly, the authorities of St. Andrew's College of Education, Oyo deserve my gratitude for giving me the study leave during which the course work of this programme was undertaken. I am indeed very appreciative of the opportunity given me to undertake the study.

May the Lord repay everybody in manifold.

Oyerogba Abodunrin

CERTIFICATION

I certify that this work was carried out by ABODUNRIN, Gabriel Oyerogba in the Institute of Education, University of Ibadan, Ibadan.



SUPERVISOR

DR. T. W. YOLOYE
Senior Research Fellow
Institute of Education,
University of Ibadan,
Ibadan.

UNIVERSITY OF IBADAN LIBRARY

TABLE OF CONTENTS

	PAGE
TITLE PAGE	i.
ABSTRACT	ii.
DEDICATION	vi.
ACKNOWLEDGEMENTS	vii.
CERTIFICATION	x.
TABLE OF CONTENTS	xi.
LIST OF FIGURES	xiv.
LIST OF TABLES	xv.
CHAPTER ONE: INTRODUCTION	
1.1 Background to the Study	1
1.2 The Problem	6
1.3 Purpose of Study.	12
1.4 Research Hypotheses	13
1.5 Significance of the Study	14
1.6 Definition of Terms	16
CHAPTER TWO: REVIEW OF RELATED LITERATURE	
2.0 Introduction	19
2.1 Nature and Philosophy of Social Studies	20
2.2 Concept of Note-taking	27
2.3 Functions of Note-taking	28
2.4 Theories of Note-taking Activity	32
2.5 Empirical Studies on Note-taking	35
2.6 Attitudinal Differences	46
2.7 Nature of Attitude	49
2.8 Relationship Between Attitude and Academic Achievement	52
2.9 Students' Attitude Towards Social Studies.	53

2.10	Personality Differences	56
2.11	Theories of Introversiion-Extraversion	57
2.12	Measurement of Introversiion and Extraversion ..	62
2.13	Empirical Studies on Introversiion-Extraversion. and Academic Performance	63
2.14	Learning and Retention of Facts.	68
2.15	Immediate and Delayed Recall	70

CHAPTER THREE: RESEARCH METHODOLOGY

3.0	Introduction	76
3.1	Research Design	76
3.2	The Variables	77
3.3	Control of Experimental Biases	81
3.4	Sampling of Subjects for the Pilot Study.	83
3.5	Research Instruments.	86
3.6	Eysenck Personality Inventory (EPI).	87
3.7	Students' Attitude to Social Studies Question- naire (SASSQ)... ..	89
3.8	Prepared Lecture Notes	93
3.9	Social Studies Pretest (SSPT).. ..	94
3.10	Social Studies Immediate Recall Test (SSIRT)..	99
3.11	Social Studies Delayed Recall Test (SSDRT) ...	100
3.12	Differences Between the SSIRT and SSDRT	100
3.13	The Pilot Study	101
3.14	The Main Study	106
3.15	Treatment Implementation	108
3.16	Analysis of the Result of the Main Study.	110

CHAPTER FOUR: DATA ANALYSIS AND PRESENTATION OF THE RESULT

4.0	Introduction	111
4.1	Hypothesis One (Ho1)	111
4.2	Hypothesis Two (Ho2)	116
4.3	Hypothesis Three (Ho3)	120
4.4	Hypothesis Four (Ho4)	124
4.5	Hypothesis Five (Ho5)	130
4.6	Hypothesis Six (Ho6)	135
4.7	Hypothesis Seven (Ho7)	139
4.8	Hypothesis Eight (Ho8)	143
4.9	Summary of the Result	147

**CHAPTER FIVE: DISCUSSION OF RESULTS, IMPLICATIONS AND
SUGGESTIONS**

5.0	Introduction	149
5.1	Effect of Note-taking Strategies on Students' Achievement in the Immediate Recall Test	149
5.2	Effect of Note-taking Strategies on Students' Achievement in the Delayed Recall Test	151
5.3	Effect of Note-taking Strategies and Attitudinal Difference on Students Achievement in the Immediate Recall Test	156
5.4	Effect of Note-taking Strategies Attitudinal Differences on Students' Achievement at the Delayed Recall Test	159
5.5.	Effect of Note-taking Strategies and Personality Differences on Students' Achievement	161
5.6	The Interactive effect of Note-taking Strategies, Attitudinal and Personality Differences on Students' Achievement	166
5.7	Implication of the Findings for Teacher Education System	167
5.8	Suggestions for Further Research	172
5.9	Limitation of the Study	174
LIST OF REFERENCES		176
Appendix I: Eysenck Personality Inventory (EPI)		191
Appendix II: Students' Attitude to Social Studies Questionnaire (SASSQ)		194
Appendix III: SASSQ: Contribution of Each Item to the Total Construct		197
Appendix IV: Facility Indices of the SSIRT		200
Appendix V: Table of Specification for the SSIRT		201
Appendix VI: Prepared Lecture Notes		202

LIST OF FIGURES

	PAGE
3.1 Research Design	78
3.2 Analysis of Factor and Cell Layout	80

UNIVERSITY OF IBADAN LIBRARY

LIST OF TABLES

TABLE	DESCRIPTION	PAGE
3.1	Distribution of sample for Pilot Study.	84
3.2	Distribution of Sample for the Main Study	86
4.1	Descriptive statistics of students Immediate Posttest Scores Under the Three Note-taking Strategies	112
4.2	Analysis of Covariance of Immediate Post test Scores for the Three Note-taking groups	113
4.3	Multiple Classification Analysis of Covariance on the Immediate Post-test Scores of the Three groups	114
4.4	Multiple Comparison of Mean Scores for the Immediate Post-test Scores of the Different Strategies Groups	115
4.5	Descriptive Statistics of Subjects' Delayed Post-test Scores under the Three Note-taking Strategies	116
4.6	Analysis of Covariance of the Delayed Post-test Scores for the Three Note-taking Strategies.	117
4.7	Multiple Classification Analysis of the Analysis of Covariance on the Delayed Post-test Scores.	118
4.8	Multiple Comparison of Mean Scores for the Delayed Post-test Scores for the Three Strategy Groups	119
4.9	Descriptive Statistics of Students' Immediate Post-test Scores of the Different Note-taking Groups Under their Attitudinal Groups	120
4.10	Two-way Analysis of Covariance of the Immediate Post-test Scores of the Different Attitudinal Groups Under the Three Note-taking Strategies.	121
4.11	Multiple Classification of the 3 x 2 Analysis of Covariance on Students' Immediate Post-test Scores	123
4.12	Descriptive Statistics of Students' Delayed Post-test Scores According to the Different Attitudinal Groups Under Their Note-Taking	

Strategies	125
4.13 Two-way Analysis of Covariance of the Delayed Post-test Scores of the Different Attitudinal Groups Under Different Note-taking Strategies	126
4.14 Multiple Classification Analysis of the 3 x 2 Analysis of Covariance of the Interaction of Strategy and Attitude on Students Achievement at the Delayed Post-test	128
4.15 Multiple Comparison of Mean Scores for the Different Attitudinal and Strategy Groups ...	129
4.16 Descriptive statistics of the Students' Achievement According to the Note-taking Strategies and the Personality Groups at the Immediate Post-test	131
4.17 Two-way Analysis of Covariance of the Immediate Post-test Scores of the Different Personality Groups Under their Note-taking Strategies	132
4.18 Multiple Classification Analysis of the 3 x 2 Analysis of Covariance of the Interaction of Strategy and Personality at the Immediate Post-test	134
4.19 Descriptive Statistics of the Students' Achievement According to the Note-taking Strategies and the Personality Groups at the Delayed Post-test	135
4.20 Two-Way Analysis of Covariance of the Delayed Post-test Scores of the Different Personality Groups Under Their Note-taking Strategies ..	136
4.21 Multiple Classification Analysis of the Delayed Post-test Scores of the Different Personality Groups Under the Different Note-taking Strategies	138
4.22 Summary of the 3 x 2 x 2 Analysis of Covariance of the Immediate Post-test Scores of the Different Attitudinal and Personality Groups Under the Different Note-taking Strategies .	140
4.23 Multiple Classification Analysis of the 3x2x2 Analysis of Covariance on the Immediate Post-test Scores of the Different Groups	142
4.24 Summary of the 3 x 2 x 2 Analysis of Covariance on the Delayed Post-test Scores of the Diffe-	

rences Attitudinal and Personality Groups Under their Note-taking Strategies	144
4.25 Multiple Classification Analysis of the 3x2x2 Analysis of Covariance of the Subject Achieve- ment in the Delayed Post-test	146

UNIVERSITY OF IBADAN LIBRARY

EFFECTS OF NOTE-TAKING STRATEGIES, ATTITUDINAL
DIFFERENCES AND SOME PERSONALITY TRAITS ON STUDENTS'
ACHIEVEMENT IN SOCIAL STUDIES

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

The wave of curriculum changes which started at the turn of the 20th century in the United States of America rapidly engulfed all the western world. The idea of integration of knowledge which became a popular movement in the western hemisphere spread to Nigeria and Africa in general. The resultant effect of this, in Nigeria, was the introduction of new integrated subjects such as Social Studies and Integrated Science.

Shortly after independence, precisely in 1963, the staff of the social sciences department at Comprehensive High School, Ayetoro, in the old Western Region of Nigeria, introduced and taught Social Studies as a subject, (Makinde, 1979; Ogunsanya, 1984; Adeyemi, 1986; and Ogunsola, 1991). This was the first time when social studies was taught in Nigeria as integrated and synthetic form at the secondary

school level. From this school, the subject spread to other levels of education and other parts of the country.

The Western Regional Government in collaboration with the United States Agency for International Development (USAID) and the Ford Foundation of the United Kingdom, sponsored the programme which eventually led to the design and development of the first ever Social Studies curriculum for the secondary schools. The same syllabus transformed into the first textbook in Social Studies for the Nigerian Secondary Schools. The subject Social Studies was later introduced to the primary school and the teacher training programmes by the Nigerian Educational Research and Development Council (NERDC) in conjunction with the Comparative Education Studies and Adaptation Centre (CESAC) and the Social Studies Association of Nigeria (SOSAN).

Paradoxically, little agreement or unanimity existed as to the definition, scope, and philosophy of Social Studies during this time when those 'patchy' and 'scrappy' efforts were being made to accommodate the subject on the Nigerian school curriculum.

A more concerted move to fully incorporate the subject

into the Nigerian curriculum, only came as result of the first Oxford Conference of African Educators in 1967 and later the Mombasa Conference of the same association in 1968. The Mombasa Conference discussed and unanimously adopted a Social Studies programme known as the African Social Studies Programme (ASSP), - (Obameata, 1981). This in effect, was later developed by the various participating countries, including Nigeria, to the Social Studies programme of the respective countries using their local environmental conditions, needs, and resources. Nigeria fashioned her own Nigerian Social Studies Programme (NNSP) from the continental one (Makinde, 1979; Ogunsanya, 1984; and Olaogun, 1984).

Another important landmark in the introduction of Social Studies in Nigeria was the epoch-making curriculum conference which took place in Nigeria in September, 1969. This conference came up with what is now known and regarded as the first indigenous national policy and philosophy of education. An offshoot of the decision at the conference was also the adoption of Social Studies as one of the core subjects to be studied until the end of the junior secondary school.

The Nigerian philosophy of education emphasized the

development of the individual into sound and effective citizen and the provision of equal educational opportunity to all citizens of the country. It also emphasized the need for Social Studies as a tool for national unity and citizenship education, Adaralegbe (1982). Rather than leaving the development of social awareness, responsibility and citizenship to be inculcated through other school subjects, Social Studies was adopted to teach these awareness, responsibility, and citizenship in an integrated form.

This wholesale adoption of Social Studies has been advocated by a number of educationists and researchers. Adaralegbe (1980)

criticized the teaching of the cognate social sciences, history, geography, government and economics at the junior secondary school and teacher training colleges. He suggested that the integrated subjects should predominate the curriculum at these levels of education.

In the same vein, Mansaray (1985) was emphatic when he said that Social Studies should be seen as an "attempt to correct the atomization and compartmentalization" of knowledge that was believed to have attended the separate school

subjects. For this purpose, he advocated that the integrated approach whereby facts, concepts, and generalization from a number of subjects or related disciplines are brought together in studying the issues pertaining to man's interactions with his environment should be adopted.

Similarly, Balogun (1986) stressed the importance of inclusion of Social Studies and other integrated subjects in the Nigerian Certificate in Education (NCE) teacher training programmes. He observed as follows:

the major problem of the Nigerian Certificate in Education level is one of misplacement of priority. Many of the NCE institutions are not paying enough attention, if any at all, to the integrated fields of study which are supposed to be their fields of specialization. (Balogun, 1986) Balogun (1986) further emphasized that in studying separate subjects, the students could not acquire enough competence in the

subject to be able to teach them well at the Senior Secondary level. He therefore advocated that integrated Social Studies and Integrated Science should be the foci of the trainees at

the NCE level.

Now that Social Studies has become fully adopted at the different levels of education, primary, junior secondary, and teacher training, some pertinent questions that could be asked are: In what ways could the teaching of the subject be facilitated? How could the would-be teachers fully imbibe the contents and methodologies of the subject? How could the learning of the subject content be enhanced for improved achievement by the learners? These are some of the questions that stimulated the interest of this researcher in probing into the effect of students' note-taking strategies which are presumed to influence the students learning in Social Studies.

1.2 The Problem

James (1972) asserted that ever since Pythagoras there has been a Mathematics tradition; in geography, ever since Anaximander there has been a cartographical tradition; and ever since Itecatacus there has been a literary tradition. From available literature, little or no such tradition exists for Social Studies as a distinct field of study especially in its present form and content on the Nigerian educational

curriculum. In this connection, many problems, paradoxes and contradictions came to be associated with Social Studies as an integrated subject.

Educators continually suggest that emphasis on learning any school subject should shift from "what to learn" to "how to learn". A logical deduction from this is that the extent of learning which occurs in any classroom situation depends not only on what is taught but also on how the students have learned. This, in fact, calls for improvement not only in the methods teachers use to impart knowledge, skills and attitude but also in the various learners' activities and devices which facilitate effective learning. These are what have been referred to as mathemagenic activities by Rothkopf (1963) or as generative activities by Wittrock (1974) or as manifestation of learning by O'Neil (1978). An important aspect of these activities which has great relevance to learning from lecture situation is note-taking.

The present study attempted to investigate the effects of note-taking strategies of students on the effective learning of Social Studies. It investigated how the activities which the learners engage in during the period of learning affect

how much they learn, retain, and recall from Social Studies lectures.

Though Social Studies educators such as Dubey (1980); Adaralegbe (1980); Olawepo (1984); Ogunsola (1991) and others have emphasized the importance of appropriate teaching strategies for Social Studies, most Social Studies teachers adopt the traditional lecture method. They engage the students in long narration without bordering on the effectiveness of their lectures. The student therefore struggle to absorb what the teacher has taught through different strategies. The concern of the present study is to find out how much one of the students' activities facilitates learning during lectures. Specifically, it was also to investigate which strand of note-taking strategies produces better learning gains from lectures and to see this in relation to students' personalities and attitudes to the subject Social Studies.

In the Western world note-taking as a device for learning from lecture, has been extensively investigated by researchers such as Aiken, Thomas and Shennum, (1975); Carter and Matre, (1975); Peper

and Mayer, (1978); Barnett, Divesta, and Rogozinski, (1981); Einstein, Morris and Smith, (1985). Each of these investigations addressed different aspects of note-taking and produced seemingly inconclusive and sometimes contradictory findings (Kiewra, 1985).

Some investigators have found that note-taking activities, interfere with learning in some situations - Aiken, Thomas, and Shennum (1975). Others have found that note-taking has no effect on performance - (Carter and Van Matre, 1975; Fisher and Harris, 1974) and still others have found that note-taking improves memory for lecture material. (Peper and Mayer, 1978, 1986; Kiewra, DuBois and others 1991).

In Nigeria, however, there is a dearth of research work on note-taking. Most studies are based on other classroom activities. For example Ibeghulam's (1980) study was on instructional objectives while Egbugara (1986) addressed the use of advance organisers. Similarly, Balogun (1983) investigated the use of adjunct questions in programmed Instruction and Ogunsola (1991) probed into the effectiveness of the combination of instructional objectives and meaningful

adjunct questions. None of these few works mentioned investigated note-taking activities of students per se. Thus, much is still left to be investigated in the effects of note-taking especially when it is linked up with some personality traits and attitudinal differences of students at NCE teacher training level of education.

The present study, therefore attempted to investigate the effects of note-taking strategies, on students' achievement in Social Studies at the college of education level.

Furthermore, students' note-taking strategies were investigated in conjunction with the effects of students' attitudinal differences and some personality traits since it had been established that students achievement in the various school subjects involves complex determinants - (Olaogun, 1984 and Osho, 1985). For example Bakare (1969) suggested that if a student perceives that he is unable to do Mathematics and Reading, this perception of his ability becomes the functionally limiting factor of his achievement in these areas of study. Similarly, the studies of Norwich Duncan (1976) and Aiyelagbe (1989), have profoundly established that attitude and personality differences of learners tend to

influence very greatly the levels at which the learners perform.

College of Education students are assumed to possess and be able to exhibit different attitudes to their various subjects and that they possess different personality dispositions. If this is so, one would then expect these differences to reflect in their achievements in Social Studies. An attempt was therefore made to examine the effects of attitudinal and personality variables on the immediate and delayed recalls which students make after lectures in Social Studies when particular note-taking strategy or the other is adopted.

In this study, three strategies of note-taking; (a) taking note concurrently with listening to lecture; (b) following already prepared note along with listening to lecture, and (c) simply listening to lecture without instruction to write any note, were adopted when students undertook listening to already audio-taped lecture. Similarly in each of these note-taking groups, there were equal numbers of students with positive attitude as well as those with negative attitude to Social Studies. Also two personality

traits, extraversion and introversion were observed as distinguishing variable among the students of each note-taking group.

1.3 Purpose of Study

The purpose of this study was to investigate in a quasi experimental setting, the effect which note-taking activity would have on students with different attitudinal and personality disposition in their learning of Social Studies at the college of education level. Specifically the study probed into the effects of:

- (1) note-taking strategies on students academic achievement in Social Studies;
- (2) Some attitudinal variables (positive and negative attitudes toward Social Studies) on the students' achievement in Social Studies;
- (3) Some personality variables (extraversion versus introversion) on the student achievement in Social Studies;
- (4) The interaction of the different note-taking strategies, attitudinal and personality differences on the students' achievement in Social Studies.

1.4 Research Hypotheses

Based on the above stated purposes, the following major Null hypotheses were tested at $P < 0.05$ level of significance.

Hypothesis One (Ho1)

There will be no significant effect of the note-taking strategies on the students' achievement in the immediate recall test.

Hypothesis Two (Ho2)

There will be no significant effect of the note-taking strategies on the students' achievement in the delayed recall test.

Hypothesis Three (Ho3)

There will be no significant effect of the note-taking strategies and the attitudinal differences on the students' achievement in the immediate recall test.

Hypothesis Four (Ho4)

There will be no significant effect of the note-taking strategies and the attitudinal differences on the students' achievement in the delayed recall test.

Hypothesis Five (Ho5)

There will be no significant effect of the note-taking

strategies and the personality differences on the students' achievement in the immediate recall test.

Hypothesis Six (Ho6)

There will be no significant effect of the note-taking strategies and the personality differences on the students' achievement in the delayed recall test.

Hypothesis Seven (Ho7)

There will be no significant effect of the note-taking strategies, attitudinal and personality differences on the students' achievement in the immediate recall test.

Hypothesis Eight (Ho8)

There will be no significant effect of the note-taking strategies, attitudinal and personality differences on the students' achievement in the delayed recall test.

1.5 Significance of the Study

The study is concerned with the effects of various note-taking strategies undertaken by students during Social Studies lectures.

Earlier researchers in note-taking, have been mostly of science based disciplines. Science subjects are less verbal in content. The present study which addressed learning in a

more verbal subject, Social Studies, appears unique in a sense. It could be that results from the previous studies are influenced by the nature of their subject disciplines. That is, they might be subject-dependant. It could be surmised that the use of different note-taking strategies in Social Studies might yield results different from those obtained from the sciences. The findings of the present study would therefore contribute an insight into the value of note-taking activities in the learning of a rather verbal subject such as Social Studies.

Secondly, the previous research findings on note-taking appear inconclusive and sometimes contradictory (Faw and Walker, 1976); Peper, 1979; and Kiewra, 1985). The present investigation, hopefully, would throw more light on the role of note-taking and thus resolve some of the earlier contradictions.

Hitherto, researchers in note-taking have been carried out at the primary and secondary levels of education. The teacher education level has been virtually neglected. Ironically, students at this level undertake longer periods of classroom lectures and as a corollary, do more of note-taking

then the lower levels. This research which was conducted at the Nigerian Certificate in Education (NCE) level would therefore afford the teacher trainers and their trainees the opportunity of ascertaining and determining which note-taking strategy to encourage their students to employ.

Generally, there have been claims (Northcraft & Jemsted, 1975; Hartley, 1976; Collinswood & Hughes, 1978) and counter claims (Thomas, 1978; Anderson, 1979), regarding the superiority of using teachers' prepared notes (handouts) over the practice of students taking their own notes and just listening to lecture. Hopefully, this study would assess empirically these different note-taking strategies and suggest which of the note-taking strategies has greater effectiveness in maximising learning.

Lastly, this study aims at examining the contribution of two constructs, personality and attitude on the note-taking activity, and the effect on students' learning. It would thus enable teachers and evaluators of academic achievement to appreciate the role of the constructs in learning.

1.6 Definition of Terms

The operational definitions of some of the terms used in

the study are as follows:

Note-taking: is the act of writing down in ones language or style the information received from a lecture. Through note-taking, learners process and record information from lecture.

Note-following: refers to making use of lecturer's prepared notes by underlining, or noting in any other form the salient points in a lecture.

Personality Differences: are those differences observed in students as a consequence of those relatively consistent and enduring patterns of perceiving, thinking, feeling and behaving that appear to give people separate identities.

Extraversion: is the turning outward of the mind into people and objects in the external world. In extravert psychic energy is channelled into presentation of objectives in external world.

Introversion: is orienting one's mind towards one's objective world. In introverts the psychic energy flows and processes are related to the inner and private world.

Attitudinal Differences: refer to the differences in students' positive or negative evaluative feelings, beliefs, values and interests towards people, objects, things, places,

events and even subjects e.g. Social Studies as a subject of study in an educational programme.

Positive Attitude: is the favourable evaluative feeling towards particular objects, people or situation. In this project, it indicates having positive feelings, beliefs, values and interest towards Social Studies as a school discipline.

Negative Attitude: is the evaluative feeling which is unfavourable to particular object, people and situation. In this study, it is taken as students' negative feeling, belief, value and interest towards Social Studies.

Immediate Recall: is the response given to tasks or question items presented to learners immediately after undergoing a period of receiving lecture information.

Delayed Recall: is the response made to tasks given or question items at a time remote from the period when the lecture information was received by the student.

In this study, a period of one (week) lapsed between the last day of lecture and the administration of the delayed test.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.0 Introduction

This chapter attempts to provide a background upon which the empirical study was based. It reviews previous studies and researches which are found to be related to the present research.

Since the primary concern of this investigation is to demonstrate the facilitative effect, or otherwise, of different note-taking strategies on students' achievement in Social Studies and in relation to learners' differences in attitude towards Social Studies, and some of their personality traits, the review covers such related study areas or sub-topics as:

- (i) Nature and philosophy of Social Studies
- (ii) Concept of note-taking
- (iii) Functions of note-taking
- (iv) Theories of note-taking activities
- (v) Empirical studies on note-taking
- (vi) Attitudinal differences

- (vii) Relationship between attitude and academic achievement
- (viii) Students' attitudes to Social Studies
- (ix) Personality traits
- (x) Theories of introversion and extraversion
- (xi) Measurement of introversion and extraversion
- (xii) Relationship between personality differences and academic achievement
- (xiii) Learning and retention in Social Studies
- (xiv) Immediate and delayed recall
- (xv) Conclusion

2.1 Nature and Philosophy of Social Studies

There are many paradoxes and contradictions about the nature, philosophy, and introduction of Social Studies as a distinct field of study in the Nigerian educational curriculum. As early as the period when the school curriculum was being initially expanded beyond the 3'R's by the Christian Missions, Social Studies was taught as history, geography, and economics. Later it included civics, psychology, and anthropology. However, the teaching of Social Studies as

integrated and synthetic subject in Nigeria is partly a product of the American educational influence on Nigeria, - (Makinde, 1979; Ogunsanya, 1984) and partly the result of the post independence efforts in curriculum development by the independent African States. African States, at this time, made serious attempts to indigenise the contents of social education for the African child, (Adaralegbe, 1980; Balyejusa, 1981; and Ogunsola 1991).

The Nigerian Social Studies programme, (NSSP) in its present form and like those of other countries, was a victim of multifarious definitions. It connotes different meanings to different people.

Before reaching its present form, it had undergone many conceptual definitions. Social Studies educators such as Wesley (1950) and Venable (1958); have described Social Studies as an offshoot of the social sciences and as "the social sciences simplified for pedagogical purpose." This traditional definition of Social Studies pre-supposes that the criteria for Social Studies curriculum selection and development should come from the social sciences. This stand has been severely criticised by other Social Studies educators

especially Engle (1960) and Shaver (1967) who were convinced that the primary concern of Social Studies is citizenship education.

Beard and Steveson (1969) contended that although social sciences do offer essentially substantive concept for describing a societal problem, they argued, like Engle (1960) and Shaver (1967) that social sciences are powerless when faced with a choice between different courses of action. One of the negative results of this inadequate definitions of Social Studies is that it has stifled creative curriculum work in the field and the content derived from the social sciences cannot lead to the realization of Social Studies objectives.

Expressing similar view, Iyewarun (1981) says the concept and scope of Social Studies are still not clearly understood. It is taken variously as "cultural studies," "oriental studies" and "social sciences". His idea is supported by Ogunsanya (1984).

Still revealing the same uncertainty is the definition of Social Studies given by the 1968 Mombasa conference of African educators. This conference, which is believed to be the genesis of the present integrated and multi-disciplinary

Social Studies gave a definition that was not concise enough. It defined Social Studies as "the learning of man and his interaction with his environment." This definition as well as that of the 1976 National Curriculum Workshop, Ibadan, see Social Studies as having man as the content for study. The Ibadan Workshop defined Social Studies as:

"the study of man and his interaction with his social and physical environment."

Thus the two definitions which differ only in term of semantics, connote similar meaning and are all part of the numerous definitions of Social Studies.

The series of changes and developments in the Nigerian educational systems have also caused changes in the definition and nature of Social Studies. Quartey (1983) stated that the sub-committee of the Joint Consultative Committee on Education, in Benin City, in 1982 agreed that Social Studies be defined as a "study of the outcomes of the interactions between man and his environment."

The Nigerian Educational Research and Development Council, (NERDC) in 1982 gave a more specific definition of Social Studies. It sees Social Studies as "those common

learning of man's interaction with his social and physical environment." It further stated that the grand objectives of "Social Studies should be "socializing" and "humanizing" the individual child and helping him/her to develop basic concepts, understanding, values, attitudes and skills necessary to survive." (p.8).

In another publication, Social Studies was defined by NERDC (1982) as:

"a way of life, a way of seeing, viewing, conceptualizing and appreciating things and issues, with special regard to their proper places and functions in the ordering and management of man's total natural, social, and technological environment." (p.12).

The two definitions relate Social Studies to both physical and social environment and also to technological and scientific environment. The NERDC further elucidated that Social Studies is different from other school subjects in its nature, content, and approach and it is a unified and integrated course of study which utilizes the "systems approach" in viewing and tackling social problems.

Udoh (1983) reiterated the definition given by the authorities in Zambia, Uganda and Kenya which said that Social Studies is:

"a subject that presents knowledge as a whole and attempts to study man in his physical, social, cultural, psychological and economic environments as they relate and interact with each other both as they have done in the past and as they do now in the present time." (p.8.).

It was in this same vein that Comparative Education Study and Adaptation Centre (CESAC) (1985) describes Social Studies. It conceptualises Social Studies as "the study of man in society with all the interplay between him, his environment and the effect of sciences and technology." In this definition and those of NERDC, it is not only the social and physical environment that are considered as being inclusive in the realm of man's interaction but also the impact of science and technology. The impact which these new developments are making to man's life is also to be studied.

In all these definitions one thing that stands out clearly is that man is the major actor in Social Studies. How

he interacts and how his environment reciprocally interacts with him, forms the basis of the study.

In an attempt to formulate a philosophical basis for the development and nature of Social Studies Adeyoyin (1990) postulated three theories. These are the Knowledge of Self Theory (KOS) Relevance theory and Dynamism theory. The knowledge of self theory 'KOS' holds that man who is made in the image of God and endowed with all the capabilities that make him a little lower than the angels but higher than the lower animals, must pursue knowledge for man's sake. The relevance theory refers to matter or issue our hand considered as practical and socially applicable. It connotes pertinence i.e. the quality of being useful and of considerable interest. Adeyoyin suggested that the continued existence of Social Studies can be justified only as it is considered relevant in the education system. Lastly, the third theory - dynamism theory, holds for changes in the subject and the context in which it is studied. Within it is process of growth, expansion of knowledge and a network of facts which also is subject to modification, acceptance and rejection.

Similarly, Osho (1985) quoting Barr et al (1978)

identified three traditions of Social Studies. He specified them as Social Studies taught as citizenship transmission, as social sciences and as reflective inquiry. He sees these traditions as mutually exclusive, antagonistic, and competitive philosophical systems with each striving to emerge as the true Social Studies.

2.2 Concept of Note-taking

In most instructional situations, what is learned depends largely on the activities of the learners during the period of learning - Rothkopf (1970). It is therefore imperative for those interested in the scientific study of instruction to examine critically those activities of the learners which affect learning and which include such activities as answering meaningful adjunct questions, summarizing, note-taking etc.

The study of note-taking is an area of instructional investigation which emerged in the 1960s. It falls within the category of learner's activities which Rothkopf (1962) referred to as mathemagenic activities - that is those "activities that are relevant to the achievement of specified instructional objectives in specified situation or places."

Specifically note-taking refers to the specific activity of encoding, in a written form, the information obtained from lecture by the learner. It is regarded as one of the 'learning sets' for attempting to enhance one's recall of the content of a lecture by taking a written transcription of the material presented.

According to Maddox (1963) note-taking involves visual, auditory and kinesthetic senses through which it facilitates learning. During the note-taking activities of the learners, the learners actively process information, paraphrase information, organise learning material and at the same time elaborate on the material. These various activities of the learners aid them in assimilating the information obtained from the lecture. This notion is consistent with the view of Wittrock (1974) which states that learning results from the generation of meaning by the learner.

2.3 Functions of note-taking

Researchers in note-taking have all identified two basic functions of note-taking as a normal classroom activity of learners. These are the encoding and the external storage functions. As early as 1972 Divesta and Gray had demonstrated,

in clear terms, the differences between these two functions of note-taking. It is upon the distinction made that other investigators in note-taking based their frame of references.

2.3.1 Note-taking as encoding activity

Note-taking refers to the specific activity or activities of taking a written transcription of the information obtained from lecture or verbal discourse by the learner. It also takes the form of underlining, marking or noting in other ways the important points or aspects in an already prepared note .

Divesta and Gray (1972) stated that one of the most important 'learning set' for attempting to enhance one's recall of the contents of a lecture is to take a written transcription of the material presented. It is a learning activity which, according to Maddox (1963), involves visual, auditory and kinesthetic senses through which it facilitates learning. Researchers like Craik and Lockhart (1972) and Mayer (1975, 1978 and 1984), have argued that note-taking functions more perfectly as an encoding mechanism. They asserted that the encoding function of note-taking is usually signalled by the demands of the learning task. Learners will then attend actively to the information that they understand.

They will paraphrase, select and summarize whatever information is relevant to their learning goals.

This view is consistent with the view that learning results from the generation of meaning by the learners (Wittrock, 1974) and with metacognitions about how and what to learn (Clavel and Wellman, 1977). Ausubel (1968) had earlier made a distinction between two types of encoding processes, that of assimilating new information to a set of meaningful structures and that of adding new information as arbitrary association. Mayer (1975) referred to the two forms of encoding as the additive and the assimilative encoding. He further went on to suggest that the additive encoding process requires only one major condition to be met - the material must be received by the learner.

Mayer (1975) also emphasised that the assimilating encoding requires that three conditions be met; one, the material must be received, two, a meaningful set of prior experiences must be available to the learner; and three, the learner must actively process that set of experience during lecture. He then concluded that the two different types of learning result in different outcome as measured by retention

and transfer.

2.3.2 Note-taking as an External Storage Mechanism

A second function of note-taking suggested by Di Vesta and Gray (1972) is that notes are a form of external storage available for review or reference at a later time. Consistent with this view is the result of the study of Carter and Van Matre (1975) which found that subjects who were provided an opportunity for review performed significantly better than subjects who were given no such opportunity, even though both groups had taken notes.

Craik and Tulving (1975) also argued that in creating their own notes, students generate a transportable and permanent storage of important information that is available for review. The review which is later undertaken enlivens the stored up information and makes retrieval easier.

Similarly, Friedman (1978) and Uwakwe (1984) suggested that note-taking functions more efficiently as storage mechanism. Friedman (1978) found that subjects who reviewed their notes, performed better than those who were not allowed to review, in a test of retention and recall of factual information. Uwakwe (1984) came to this same conclusion.

2.4 Theories of Note-taking Activity

There are many theories about note-taking activity in learning. The theories include, the attention, the distraction and the generative theories.

2.4.1 The Attention Theory

Frase (1970) states that note-taking forces the learner to pay more attention to the presented material while Craik and Lockhart (1972) say note-taking forces the learner to process the presented materials more deeply. According to this theory, on the average, note-taking subjects would encode more of the information of the materials presented in the lecture and as well select the most important points raised in the lecture because of their increased attention. The theory, therefore, asserts that note-takers would perform better than non-note-takers on all relevant dependent measures in a note-taking study. Thus the theory suggests a facilitative effects of note-taking as a strategy of learning in a lecture situation.

2.4.2 The Distraction Theory

The distraction theory hypothesises that taking note concurrently with lecture forces the learner to concentrate on

the motor act of writing instead of more fully listening to the lecture. It adds that when the lecture information is presented at a rapid rate, note-taking can prevent the learner from paying the required adequate attention to the material (Peters 1972). According to this theory, note-taking subjects in a lecture, would, on the average perform worse than non-note takers on all relevant dependent measures when lecture information was rapidly presented. However, this theory fails to specify whether or not there would be any consolidation of memory stock of lecture information sometimes after the lecture presentation and when the note-taking has ended. That is, whether the note-takers would still perform worse during a delayed retention test or when transfer of knowledge was required.

2.4.3 The Generative Theory

Gives a different dimension of learning which takes place during lecture. While the attention and distraction theories are concerned with a quantitative question, "How much is learned?", and assume that there is only one major step in cognitive processing from lecture, the generative theory, on the other hand, is based on the idea that additional cognitive

processes are undertaken during note-taking. For example, the note-taking learner is able to actively relate the material from the lecture to existing stock of knowledge - (Wittrock, 1974, and Mayer, 1976; 1984).

The generative theory makes three related assumptions. First, that there is usually a pattern of treatment - post test interaction in which note-takers perform better than non-note-takers on delayed recall test but worse on the near transfer or immediate recall test. This assumption or prediction is based on the idea that note-takers can relate presented information to existing knowledge and thus build a more integrated or broader learning outcome. This broader learning outcome facilitates inferences required in delayed retention test or transfer of learning. However, because the material has been re-organised, performance may be hindered for near transfer or immediate recall of specific facts.

Secondly, the theory assumes that the pattern of treatment - post interaction was expected to be stronger for subjects who were unfamiliar with the lecture material but not for those who were familiar with it. Thirdly, the same pattern of treatment-post test interaction was expected to be

displayed for other types of generative activities such as taking summary notes or answering meaningful adjunct questions after each segment of lecture.

In summary the generative theory therefore, predicts that note-takers should learn more because more 'cognitive anchors' exist to which new knowledge is attached.

To test these predictions of the note-taking theories especially the generative theory, the present study includes:

- (a) concurrent note-taking for a moderately paced lecture with no opportunity for review;
- (b) dependent measures that include both immediate recall and delayed recall of lecture information.

These have been included specifically to test the predictions of the generative theory of note-taking on the academic achievement of some Social Studies students at the College of Education level.

2.5 Empirical Studies on Note-taking

The literatures on the effect of note-taking on learning has not yielded consistent results. In fact, the critical implicit assumption that by encouraging students to take notes, make summaries, underline salient points in prepared

lecture notes or be otherwise active during instruction aid learning, has been challenged (Fisher and Harris, 1973, Carter and Van Matre, 1975). Nevertheless, many researchers still believe that one of the most reliable strategies for enhancing one's recall ability of the content of an instruction is to take a written transcription of the information presented, (Khulvavy, Dyer and Silver, 1975).

Some investigators have found that note-taking interferes with learning (Peters, 1972; Fisher and Harris, 1974), others have found that note-taking has no effect on performance (Fisher and Harris, 1975; Carter and Van Matre, 1975); and still, some others have found that note-taking improves memory for lecture materials (Divesta and Gray, 1972; Peper and Mayer, 1978; 1986).

A set of studies which have illustrated the effect of different types of note-taking strategies include those of (Todd and Kasaler, 1971; Fisher and Harris, 1973 and Aiken, Thomas and Shennum, 1975). Todd and Kessler (1971) used a very brief passage and had three different note-taking strategies adopted by their subjects. The first group took notes, the second group underlined salient points in prepared

lecture notes, while the third only listened without taking notes. Comparing students' achievement on dependent measures such as transfer of learning or application, the note-takers excelled the other two groups.

Also supporting the value of note-taking is the study of Divesta and Gray (1972). using a series of three 500-words taped passages, the researcher found that subjects who took notes performed better on both free recall and multiple choice retention measures. The same result was obtained in a later but similar study, Divesta and Gray (1983). In the study a set of six 500-word segments was presented and was later followed by a true-false delayed retention test. Confirmatorily, the note-takers still performed better than the non-note-takers.

Aiken, Thomas and Shennum (1975) obtained yet another result which illustrates the facilitative effect of note-taking despite the marked differences in the procedure they adopted. The authors presented subjects with a 2000-word taped lecture in four sections of approximately equal length, with brief intervals in which no material was presented after each section. Students either took notes during lecture, during the

intervals or did not take note at all. From a post-test, the authors observed that students who took notes during these intervals recalled significantly more of the lecture contents than students who took notes while the material was being presented or took no note at any time. The study does demonstrate that note-taking in between lectures or at lecture intervals proves more facilitative to learning than taking notes in concurrence with listening to lecture.

Information gleaned from these studies and some earlier ones support the value of note-taking as an essential activity for students during lecture. However, within the same period other studies came to different conclusions. Some suggested that note-taking practice may not be helpful or may even be detrimental to learning. Among such studies are those of Fisher and Harris (1974); Peters (1972) and Weener (1974).

Peters (1972) reached a negative conclusion on note-taking practice. After presenting a 1600-word passage on steel at either normal (146 words per minute) or fast (202 words per minutes) rates, he studied the effects of note-taking on recall. Peters discovered that note-taking significantly reduced scores on a 25-item multiple choice

test. The detrimental effect was particularly marked for low-efficiency learners. Thus, it illustrates that note-taking associates positively with high academic efficiency only. Low-efficiency students do not benefit enough from note-taking.

Fisher and Harris (1974), found no significant difference between subjects who took notes and those who did not. Comparing several groups on retention of materials presented in a 20-minutes lecture on personality testing, by using free recall and multiple choice measure, he concluded that note-taking gave no advantage over non-note-taking.

In a similar vein, Weener (1974) conjectured that a good memory may be needed in order to take advantage of note-taking especially when the speed of lecture is high or the information density is high. This finding is consistent with Peter's (1972) result that note-taking has effect on high-efficiency subject than on the low-efficiency learners. Note-taking thus had a negative effect on the low-efficiency learners.

Similarly, the result illustrated the distinction between the encoding and the storage functions of note-taking.

Allowing subjects to review their own notes produced a substantial difference in the achievement of note-takers and non-note-taking subjects.

The same study, showed that the rate of presentation of material also contributed significantly to the effectiveness or otherwise of note-taking. The study demonstrated a clear superior retention ability for note-taking groups involved, that is whether note was taken concurrently or at the intervals.

One would, in the light of the foregoing information, agree with Faw and Waller (1976) that note-taking may interfere with the ongoing reception of materials when presentation rates are more rapid and no pauses are inserted for notes to be taken. However, slower rates of information presentation would definitely permit time for taking note with no significant reduction in attention to other cognitive activities.

The period between 1975 and 1980 witnessed few reported experiments on note-taking. However, the early eighties recorded a resurgence of interest in note-taking studies. Barnett, Divesta and Rogozinki (1981); Mayer (1984); Uwake

(1984); Einstein, Morris and Smith (1985); Peper and Mayer (1986); Cook and Mayer (1988) and Walko 1989) are but a few of such published works.

Peper and Mayer's (1978) study investigated the effects of note-taking on 'what is learned' from video taped lectures. Three separate experiments were performed. Sixty students of the University of California participated in the experiment. Achievement measures were obtained for near transfer tests as well as far transfer objectives. In the first two experiments, the authors obtained results indicating that note-takers excelled on far transfer test items while non-takers excelled on near transfer tests.

As in Peters' (1972) study, the low-ability subjects had marked detrimental effects of note-taking. This experiment further confirms the link between note-taking effects and students' individual differences.

In the same report, experiment three, produced a result where the recall protocols of note-takers were significantly higher than those of non-note-takers. Similarly, note-takers recorded more idea units concerning underlying concepts and more intrusions concerning other relevant concepts. Non-note-

takers did better at recalling technical symbols and examples and produced more vague summaries and connectives. The authors therefore posited that note-taking can result in a broader learning outcome, rather than just more learning because a assimilative encoding process is encouraged in note-taking.

In two separate experiments which examined (a) the encoding functions of note-taking and (b) the processing differences between successful and less successful subjects, Einstein, Morris and Smith (1985) concluded that note-taking enhances the organisational processing of lecture information. When the notes and the recall abilities of the successful and less successful subjects were compared, it was discovered that successful subjects recalled more of the important proposition and recorded more protocols. Also, it was observed that the two groups were similar in their note-taking styles and the degree to which they benefitted from reviewing their notes. The memory difference between the two groups was therefore interpretable in terms of factors occurring during note-taking with successful students engaging in greater integrative processing of information presented.

Consistent with Wittrock's (1974) idea that note-taking is a generative activity that encourages the building of connections between what is presented and what is already known was the study of Peper and Mayer (1986). This experiment demonstrates that note-taking has facilitative effects in learning science. Subjects viewed a video-taped lecture on automobile and either took notes or listened only. As in their 1978 study, note-takers performed better than non-note-takers on far transfer tasks but worse on near transfer tasks.

Particular importance is attached to the results of this study because it amplified the assumptions earlier made on the treatment versus post-test interaction pattern obtainable from note-taking experiments. The predictions of the attention, distraction and generative theories were fully confirmed. Peper and Mayer (1986) concluded, that note-taking encourages learners to build external connections between what is presented and what learners already know. The study report went further to suggest that other activities such as answering adjunct questions, summarising and paraphrasing tests could effectively as well build or generate external

connections. Similar conclusions were reached by Balogun (1983), Mayer, (1984) and Ogunsola (1990).

Walko's (1989) study had a slightly different pattern from many earlier experiments. Using 140 high school subjects, Walko examined the instructional effects of the additive structure imposed by different levels of interactions on visual materials. The instructional effect was measured by four-part post-tests (Drawing, terminology, identification and comprehension) performance of students.

Walko's subjects were randomly assigned to one of four conditions of note-taking.

- (i) instructional booklet only (as control);
- (ii) instructional booklet plus instruction to take note;
- (iii) instructional booklet plus a simple formal outline type of study guide;
- (iv) instructional booklet plus a complex study guide consisting of formal outline and interactive type of activities.

Using the analysis of variance on the dependent variables, Walko retained the null hypothesis for the mean

values on the overall post-test and concluded that additive structure imposed by different levels of note-taking on visual materials are not effective in improving students' achievement of different types of instructional objectives.

From the few studies reviewed the inconclusiveness of findings on note-taking activity becomes more apparent. While a number of studies assert the facilitative effects of note-taking strategies, others suggest that note-taking has either no tangible effects or at worse a detrimental one.

Could these inconsistent findings, be partly attributable to the subject-matter, to the personality and attitude of the subjects involved in the studies or the nature of the tasks the students were exposed to? Could the facilitation or otherwise of students' performance by each note-taking strategy be dependent on the nature of the lecture information, the familiarity or non-familiarity with the lecture material or the period of testing, whether immediate or a delayed interval between the teaching and the post-testing of the subjects? There is need, therefore, to make further attempt to look closely and more critically at the literature on all the variable under consideration in this

present study and their relationship to note-taking as a classroom activity that aid academic performance of college students in Social Studies.

2.6 Attitudinal Differences

For a very long time, students' academic performance had been taken to be completely hinged on intelligence. But in recent times, the emphasis on intelligence as the single predictor of scholastic ability is not only outdated but grossly misleading, (Vabaza, 1974). A large number of researches (Davidoff, 1980; Durojaiye, 1984; Gardiner, 1983; and Boyinbode, 1989 inclusive) have repeatedly demonstrated that intelligence is only a facet of the whole dynamic personality whose other non-cognitive factors should not be neglected in any attempt to unravel the correlation of academic performance.

One non-cognitive factor which has been established to correlate highly with academic achievement is attitude (Norwich and Duncan, 1970; Baureti-Fuchs, 1975; and Odufuye (1985). The examination of attitude is based on the theory of psychologists who believe that attitude is a reasonably enduring factor and can be distinguished from sets and

expectations. It is also established that attitudes may be held not because of any characteristics of the subject in question, but because they help to resolve certain inner conflicts,

The importance of the study of attitudes is better appreciated if one considers the words of Shaw and Wright (1969) that:

"if the attitudes of a person towards a given object or class of objects is known, it can be used in conjunction with situational and other dispositional variables to predict and explain reactions of the person to the class of objects". (p.10).

In the present study, attitude was viewed in conjunction with personality to interact with the different note-taking strategies in determining students performance in Social Studies.

Attitude has been defined in a plethora of ways in the educational literature. To define attitude, Oskamp (1977) cited a comprehensive definition previously ascribed to Allport, as:

"a mental or neutral state of readiness organised through experience, exerting a directive or dynamic influence upon the individual's responses to all objects and situations with which it is related". (p.70).

From the definition, it can be inferred that mental predisposition and experience of individuals count very much in the individual's response. Also that object, event and situation are pertinently linked up in the determination of the individual's attitude. In essence, the object, event or situation play significant role in making any attitude either positive or negative.

To Peter (1972) attitude is "a member of a crowded class of concepts invoked in some form to explain the apparent directiveness of behaviour." The problem then is, why is any particular response what it is, rather than any one of other numerous possibilities.

The psychologists' concept of attitude is that they are latent variables in that they cannot be directly observed, but can be inferred from observable responses to a class of stimuli and they are assumed to mediate consistency and

covariation among responses. Little wonder why Bolwar (1973) equates attitudes with unconscious irrational tendencies and opinions. He further distinguishes them from conscious rational activities. A more popular belief refers to attitudes as "matters of taste and opinion rather than the question of facts."

2.7 Nature of Attitude

Attitudes are the end products of the socialization process and they significantly influence man's responses to cultural products, to other persons or groups of persons and to subjects of study. If the attitude of a particular person towards a given object or a group of objects is known it can be used to predict and explain the person's usual reactions to the object, person or school subject.

Attitudes are construed as varying in quality and intensity (or strength) on a continuum from positive through neutral to negative which reflects the evaluation of the objects in relation to goal attainment (Krech et al, 1967). The strength of the attitude is represented by the extremity of the position occupied on the continuum, becoming stronger as one goes outward from the neutral position. This intensity

which reflects the strength motive is expected to correspond to the strength of this reaction.

Attitude, on one side of such continuum indicate negative effective reactions which arouse responses of negative approach and avoidance such as attack and repulsion respectively. But, on the other side of the continuum, attitudes indicate positive affective reactions which result in responses of positive approach.

According to Sherif and Sherif (1956) attitudes are learned, rather than being completely innate or as a result of constitutional development and maturation. Attitudes are learnt through interactions with social objects and in social events or situations. Since they are learned, attitudes demonstrate the same properties as other learned reactions such as latency and threshold. They are subject to further changes through thinking, inhibition, extinction, fatigue etc. (Gallenbech and Smith (1950) in Oskamp (1977)). Thus, attitudes are subject to alteration, maintenance and breakdown through manipulation of the same order of variable as those producing their original acquisition. All forms of learning, classical and instrumental, conceivable provide bases for the

acquisition of attitude.

Furthermore, attitude possess varying degrees of interrelatedness to one another, (Krech et al, 1962, McGrath, 1964; Eysenck, 1972). Attitude are interrelated to the extent that they possess similar reference or similar valences (by virtue of application of common evaluative concepts).

Attitudes which are highly correlated or interrelated form clusters or sub-systems. These sub-systems are interrelated with one another to form the total attitudinal system of the individual. The interrelatedness occurs because of similarity in the evaluative conception applied, for example all the things which the person loves or hates.

In conclusion attitude can be described as the individuals evaluative feelings, beliefs, values and interests towards people, objects, things, places, events and subjects. It is a frame of reference which saves time, organises knowledge, has implications for the real world of learning and can change in the face of acquired knowledge.

2.8 Relationship Between Attitude and Academic Achievement

A learner's attitude has been found to affect both his scholastic achievement and his education. For example attitude towards a school subject which is a measure of the degree of the learner's attraction to or repulsion from the subject-matter, influences every other thing connected with the subject. It influences the student's attendance at lesson, his behaviour toward all the learning activities in the subject and incidentally the person teaching him the subject-matter. Attitude towards a school subject will therefore affect the student's achievement in the particular subject (Bauret-Fuch, 1975).

In support of the above suggestion, researchers like (Norwich and Duhcan, 1970; Bauret-Fuch, 1976; Gardinar, 1985; Durojaiye, 1984; Roettger, Szymosnk and Millard, 1979; Odufuye, 1985 and Aiyelagbe, 1989), have all consistently asserted that learners' attitudes and interest always influence school achievement. From their empirical studies, they have confirmed that there exists a significant and positive relationship between.

students' attitude toward school subjects and their achievement in the subjects.

Ahierakwen (1981) and Hamilton (1982) in their respective studies came to the conclusion that attitude towards science subjects are related to achievement in science. Similarly Aiyelagbe (1989) discovered that College of Education Students' attitude to Yoruba functionally relate to their achievement in the subject. He also found no significant difference between the attitude of students in one college and those in another.

Similarly, Ramsett, Johnson and Adams, (1974); Takima, (1971); Webb (1972); Schibeci (1984) Gardiner (1985); and Igwe (1979) also found positive correlation between students' attitude and their academic achievement. However, some of these studies obtained low indices of correlation between attitude and academic achievement.

2.9 Students' Attitude Towards Social Studies

Social Studies, as a school subject is relatively new on the Nigerian School Curriculum - Ogunsanya (1982). By implication, relatively few works exist in the literature to

attest to the relationship of students' attitude to the subject and their performance in it. Nevertheless, the results of the few available studies are consistent with the findings made in respect of other subjects. That is subjects with positive attitude to particular school subjects usually perform well in the subject.

Week's (1972) study inquired into the attitude of infant pupil-teachers towards curriculum package in Social Studies. Using the Likert type scale for the measurement, he obtained a result which revealed that the teachers had positive attitude to the curriculum package.

Machart (1977), in another study sought to determine whether there were any significant differences between the attitudes of the 6th grade students towards Social Studies and science, spelling, mathematics and reading and came to the conclusion that there were no significant differences. Machart however, found that the attitudes of boys towards Social Studies were significantly more positive than those of girls.

In Nigeria, Olawepo (1978) measured and described the attitude of student-teachers to Social Studies and correlated

their attitudes with their performances in Social Studies. Employing the Likert type attitude scale on 109 students-teachers, Olawepo discovered that:

- (a) All student-teachers had positive attitude to Social Studies with most of them having very positive attitude. But there was no significant differences between male and female student-teachers in their attitude towards the subject. None also existed between the brilliant and the weak student-teachers.
- (b) All the 5 correlation coefficient indicating the association between attitude and performance in Social Studies, for all treatment groups, were low, but positive.
- (c) Sex and achievement differences affect the association between attitude and performance. Female showed more positive attitude to Social Studies than males, while

those with higher achievement had more positive attitudes as well. Adalumo's (1986) study was much of a replica of Olawepo's (1978) study. In the same way, he (Adalumo) discovered that students had positive attitude towards Social

Studies as an area of school curriculum. But unlike Olawepo (1978), Adalumo discovered that positive attitude did not correlate with academic performance in the subject.

The inconclusive nature of findings in this area of research further underscores the need to further investigate into students achievement in the subject and what factors influence such achievement. The present study sought to probe, in part, into the relationship between the attitude to Social Studies and students achievement in the subject.

2.10 Personality Differences

Personality, according to Allport, (1963) is:

"the dynamic organisation within the individual of those psychophysical systems that determine his characteristics behaviour and thought" (p.28).

Similarly Davidoff (1980) sees personality as:

"those relatively consistent and enduring patterns of perceiving, thinking, feeling and behaving that appear to give people separate identities."

The two psychologists, thus, see personality as a basic

and important factor which determines what human beings are and what they are capable of doing. To them, also personality is not a unitary or singular factor but one that is multifaceted.

Eysenck (1968) suggested that personality is expressed in four dimensions which are virtually independent of one another. Those are, introversion-extroversion dimension, neuroticism, psychoticism and general intelligence. Of these dimensions, the present study considers the introversion-extraversion dimension as quite related to students' activities during lecture.

Apart from the findings that the introversion-extroversion dimension shows itself as a major determinant of differences in classroom activities of pre-primary and primary students, it is also known to affect the responses of older students to teachers instructions. The need therefore, arises to examine what the personality of extroversion and introversion is, and to what extent it affects the students' note-taking activities and achievement in Social Studies.

2.11 Theories of Introversion- Extroversion

Jung (1923) who is universally acknowledged as the author of extroversion-introversion personality dimension, defines extroversion as:

"an outward or observable behaviour which is a product of constitutional differences, as they interact with the environment, giving rise to descriptive behaviour differences."

(p.10)

Hall (1970) quoting Jung related extroversion and introversion dispositions to the different direction of the libido (psychic energy). However, other see the disposition as being determined by the degree of excitation and inhibition in the central nervous system.

In extroversion, the libido is channelled into representation of the objectives external world and concerns itself with perception, thought and feeling about objects, people, animals, customs, conventions, political and economic institutions. In the introversion, the libido flows towards subjective psychic structure and processes relating with the

inner and private world of the psychic.

Introversion and extroversion sometimes appear to be dynamic for a person may be extroverted at one time and introverted at some other time. However, he cannot be both at the same time or occasion (Boyinbode, 1989). Thus, both personality differences are said to be mutually exclusive and one only predominates in an individual during his lifetime.

Jung (1923) posited that there is a temporary changeability of personality differences and asserted that "a person is more or less extroverted and introverted, but he is not totally the one or totally the other". He further stressed that neither the trait of introversion nor that of extroversion is abnormal in itself and that each is related to a neurosis and a psychosis. Introversion is associated with psychosthenia and schizophrenia while extroversion is associated to hysteria and manic depressive reaction.

Eysenck (1967, 1969, 1970) postulated and reaffirmed the biological differences between extroversion and introversion. He suggested that while the extrovert has a lower level of non-specific cortical arousal, the introvert has a higher level and hence the extrovert requires a higher level of

external stimulation to reach the threshold. The brain monitors incoming neutral impulses resulting from environmental stimulation and either excites or inhibits responses of higher brain centres to the stimulation. Thus the extrovert and introvert differ in the relative level of excitation and inhibition. Introverts develop conditioned responses more easily than extrovert.

In learning the extrovert is known to perform better when the task is below the optimal level while the introvert shows better learning performance as soon as the level of task difficulty is above the optimal level.

According to Eysenck (1976) an extrovert is typically sociable, lively and emotionally expressive. He likes parties and has many friends. He is active, aggressive, quick to make decision, craves excitement and takes chances. Furthermore, an extrovert is fond of practical jokes, inclined to be adventurous, impulsive, optimistic, loses his temper quickly and is happiest when surrounded by people.

A typical introvert, on the other hand, is a quiet and retiring person who is fond of his own company. He is reserved and tends to be distant except with intimate friends.

An introvert is introspective, intellectual, well ordered, emotionally expressive, value oriented and plans quite ahead of actions. He is shy, secretive, contemplative, slow in decision making and taking, enjoys solitude and given to day dreaming. Furthermore, an introvert is found of books, rather than people, reserved, 'always looks before he leaps', keeps his feeling under close control, does not lose his temper easily, reliable, somewhat pessimistic of life but takes responsibilities rather seriously - (Eysenck, 1963, 1967, 1970 and 1976; Vabaza, 1974; and Boyinbode, 1989).

Eysenck and Cookson (1969) posited that introverts are late developers and that some of the differences in scholastic performance shown by different personality groups may be reflective of differing responses to social motivation and maturity. This notion is favoured and supported by Entwistle and Welsh (1969). They used the same explanation in terms of the social behaviour patterns which they discovered among college students.

It should be noted, however, that the above description of these two personality disposition are idealised end-points of a continuum to which normal individuals approach with

lesser or greater degree.

2.12 Measurement of Introversiion and Extroversiion

Much of the definition and description of personality variables stems from factor analytic research. Eysenck (1947) made a factor analysis rating of neurotic symptoms and came out with a bi-polar factor of dysthymic-hysteriic symptoms. He further concluded that this dichotomy was related to Jung's (1923) concept, of extroversiion.

Furthermore, Eysenck (1953) found that several scale of the Guilford-Martin (1940) personality questionnaire were related to the dysthymic-hysteriic dichotomy. One scale, Rhathymis loaded most highly on an extroversiion factor. In a factor analysis that contained 24 rhathymia items, Eysenck (1956) derived a factor which became the extroversiion scale of his (1959) Maudsley Personality Inventory (MPI).

The Maudsley Personality Inventory was later refactored and revised to become the Eysenck Personality Inventory (EPI) - Eysenck and Eysenck (1963). For this, the author had become very popular and the scale had gained universal acceptability.

Other researchers (Braun, 1972; Cattell, et al, 1970),

have worked on and factor analyzed personality dispositions. However, Eysenck and Eysenck (1963) personality inventory has remained the most popular. For this reason as well as for the suitability of the scale, the present investigator adopted the 'Extroversion component' of the Eysenck Personality Inventory (EPI), and used it to measure subjects personality.

2.13 Empirical Studies on Extroversion Introversion and Academic Performance

There are many studies on the correlates of extroversion, introversion, learning and academic performance. Franks (1957) had reported that introverts condition faster and perform better than extrovert on vigilance task.

Walker (1958) postulated the 'Action decrement' hypothesis in which he specified that extrovert with low arousal and weaker consolidation show better recall soon after learning, while the introvert with high arousal and stronger consolidation would recall better later on, when consolidation has ceased. This implies a cross-over effect, with extrovert demonstrating forgetting and introverts improved reminiscence. Studies of Jensen, Howarth and Eysenck (1968) and Howarth

(1968) have confirmed Walker's assertion.

Leith (1973) had an experiment on personality, Mode of Assessment and Students' Achievement. He came to a conclusion that extrovert achieved significantly higher scores than their more introverted peers. The subject-matter of Leith's experiment was Educational Sociology. Leith opined that his result had been influenced by other factors. In providing an explanation for his result, Leith (1973) attributed it to an interactive relationship between method of instruction and the introversion-extroversion dimension of personality.

According to Leith (1973) extrovert have a greater tolerance for ambiguity and lack of structure in the teaching situation whereas introverts are more inclined to be responsive to unambiguous and clearly structured situations. In a way, one therefore sees the reason why Leith's (1979) result run counter to a large number of other results which considered the relationship between academic success and extroversion (Furneaux, 1962; Warbuton, 1962; Rushton, 1966; Levin, 1967; and even Leith 1969 and Leith and David, 1969).

At the lower educational level, Jones (1960) Rushton (1966) and Savage (1966) reported that extroverted children

tend to perform better in later primary and early secondary levels. This result was later confirmed by Eysenck and Cookson (1969) when they analyzed test scores of 4,000 primary school pupils and discovered that extroverted pupils had higher mean scores than their introverted counterparts.

Other studies (Elliot, 1972; Wisdom, 1973) reported gender differences. The extroverted girls and the introverted boys were found to be more successful. Though these works found the differences to be small, it, at the same time indicates the need to analyse such results based on the gender differences.

Also at the higher institutional level, Savage (1962) in Australia, Furneaux (1962) in England, Bending (1960) in the United States of America and Kline (1966) in Ghana have all reported the introverts as being academically superior to the extrovert.

Rowell and Renner (1975) administered the Eysenck Personality Inventory (EPI) to 136 full-time postgraduate diploma students in Education and investigated the relationship between personality, choice of method of assessment and achievement in four theory courses. The

researchers found, that $P < .05$ level of significance that the extroverted students achieved significantly higher scores than their introverted peers.

This finding, again runs counter to Rushton (1966), Leith (1969) and Leith and David (1969) mentioned above, but it confirms the findings of Leith (1973) and Wisdom (1973).

Using three types of tests and three different groups of subjects, Elliot (1972) investigated personality factors and scholastic attainment in students. He concluded that there is a high correlation between extroversion and reading ability (R.A) but a negligible one between extroversion and Intelligence Quotient (I.Q) when Mental Age (M.A) and Reading Ability (R.A) respectively are held relatively constant.

Exploring another dimension of the relationship between personality and academic attainment, are the studies of Smithers and Batcock (1970) and Wilson (1971). In these studies the relationship between personality and students' performance in different academic discipline were investigated. Wilson (1971) reported that extroversion was found to be significantly related to failure for all the students in the Arts Faculty. Neurotic introverts performed

better in Engineering and Language while the stable introverts excelled in Pure Science and History. However, in the social sciences, he found that the correlation between either of these two personality variable and attainment was negligible. These findings were supported by Kline and Gale's (1971) study.

On the African scene, studies investigating the personality correlates with academic performance have been few and the few ones available have reported very low correlations. Durojaiye, (1974) used the Gibeon's spiral Maze as a measure of stability-instability in students. He came up with correlation ranging from .08 to 0.16 between this personality measure and school performance among a group of Uganda secondary school pupils.

From all the studies reviewed, it became apparent that the extrovert and introvert personality dimension has effect on students activities and academic achievement. However, the magnitude and direction of the effect is not conclusive. Thus this present study attempted to find out the magnitude and effect of these personality variable on the achievement of students in social studies at the College of Education level.

2.14 Learning and Retention of Facts

The essence of the learning process is the systematic assessment of the ability to recall learned information, as well as the capability to transfer the acquired knowledge when the need arises, (Uwakwe, 1984). However, this ultimate goal may never be attained unless the three sequential stages of learning processes acquisition, retention and recall are effectively stimulated. It is only a systematic process of learning that can ensure the attainment of this ideal. The need therefore, arises that educational systems should seek ways of ensuring the attainment of meaningful and effective fact retention for the purpose of recall at both the immediate and remote future.

Researchers in psychology and education, like Siemick (1967); Neisser (1967); Adams (1967); Tallend (1968); Postman and Keppel (1969) have expressed concern over the fallibility of the human memory. Tallend (1968) and Postman and Keppel (1969) have come up with diverse factors contributing to learning and retention of factual materials in various learning environments.

The psychoanalytic theory postulates that pleasurable

materials when learnt are less prone to forgetfulness than painful experiences. Similarly, Fay and Smith (1941) posited that materials learnt under cool temperature are more easily retained and recalled than those learnt under hot environment. Materials learnt at a temperature higher than 69° Fahrenheit are less remembered. This, they tagged the climatic temperature or Temporal theory. It follows therefore, that learning undertaken under cool environmental condition is likely to make more permanent impression than that learnt under humid or hot environment.

Robinson (1970) asserts that forgetting is not a simple fading away of once known materials or impression, but is dependent on time and space as well as individual's constitution. This view further buttressed the view of Gray and Rogers (1959) who had earlier postulated that people tend to forget the content of an article in a controversial issue more rapidly if they disagree than if they agree with it.

However, Robinson and Udoh (1979) outlined four methods of attacking forgetfulness in order to accelerate remembering. These are: stimulating interest and maintaining the intent to remember; selecting the key words and phrases in a study task

or lecture; repetition; and distributed learning. The second method underscores the study of note-taking activity in learning a Social Studies content which is known to be more often than not taught through the expository method (Okunrotifa, 1972 and Robert Voth 1975.)

The role of immediate and delayed recall was examined in this present study.

2.15 Immediate and Delayed Recall

Recall is the self expressive process of relaying information item which an individual has been previously exposed to. In order to facilitate the recall process, the materials must be well learned and the learner should be encouraged to express himself in his own words rather than repeating the instructors own words.

Facts and ideas expressed in the learner's own words are often much more remembered. In this way the ideas the writer writes become meaningful and make a deeper impression on the learner.

Kintsch (1968) provides a careful review of the strength theory of recall and recognition. This theoretical framework has it that recall and recognition involve basically the same

process except that recognition of an item requires a lower threshold of strength than recall. This theory is supported by the fact that several experimental variables affect recall and recognition in the same way. For instance temporal variables such as time and retention interval as well as massing and spacing of presentation impinge similar effect on recall and recognition, Skotko and Rourke (1980).

One theory of recall in psychological literature was propounded by Eichs (1982). His composite Holographic Associative Recall Model otherwise known as CHARM has a fairly elegant theoretical framework. The main assumption of the model is that items are represented as pattern of features rather than as discrete indivisible units. The items may vary in their similarity to each other. Two such items are associated relatively by means of the operation of convolution. The result of the association is stored in a composite memory trace that consists of the superimposition of other association as well. Retrieval occurs by means of operational correlation. And finally the retrieved item is identified as a particular response by being matched to every item in a taxicon representing the semantic memory.

The relevance of these theoretical viewpoint of recall to the present study is significant. Learners sometimes tend to forget what they have been exposed to due to ineffective or deficient mode of learning or of presentation.

As Divesta and Gray, (1972) Khulvary, Dyer and Silver, (1975); Locke (1971), have individual posited, the most reliable learning strategies for enhancing retention and recall of the content of a lecture is to take a written transcription of the material presented. This shows the relevance of note-taking as aiding recall of facts. As an encoding mechanism, note-taking allows the learners to transcribe whatever subjective association, inferences and interpretations that occurred to them while they listened to the text material. The function of note-taking aids recall of facts or information stored in the semantic memory.

Crawford (1925); Howe (1970) studies lent their own credence to the efficiency of note-taking as a facilitator of effective immediate and long term retention and recall. In this empirical study, Crawford came to a conclusion that note-takers had significantly higher immediate and long-term recall scores than non-note-takers. However, he did not specify the

note-taking strategy that was adopted by the note-takers in his study. Equally, Hows (1970) demonstrated that the probability of recalling items that occurred in the subjects own notes was about seven times that of items not in the notes. He also revealed that subjects who were allowed to review their notes had significantly higher mean recall test scores than their non-note-taking counterparts who attended to an interfering task. This, in a way, brings in the essence of rehearsal immediately after listening or immediately prior to taking a test on the lecture content.

Divesta and Gray (1972) showed that note-taking leads to an increase in the number of ideas recalled from prose passages. He further concluded that the increased attention given to the concepts while taking notes increases the probability that the concepts will be retrieved even though there is little or no chance to review the notes before taking the test.

From another perspective, Hunkin's (1968) experiment brought in the idea of higher order questions prompting more thorough study and re-organisation of the material learnt. He also claimed that more important propositions from the notes

are recalled if questions asked are of higher order than lower order.

In many reported studies, learning was tested with immediate retention test only. But Patrick (1968) administered multiple choice tests immediately after lecture and one week later, to test delayed retention. His data showed that retention and recall were lower on the delayed test than the immediate test. However, the effect of note-taking remained conspicuous in that note-takers recalled more facts than non-note-takers.

In a similar investigation Einstein, Morris and Smith (1985) revealed that in both the immediate and delayed tests of retention and recall of factual knowledge, the more successful students recorded more high importance propositions in their notes than the less successful students. The memory difference between the two groups of learners was interpreted to be the result of factors occurring during note-taking, with the more successful engaging in greater integrative processing of information during note-taking.

In general terms, it would be observed that the literature, on note-taking, like other educational and

psychological concepts, is not conclusive. Every study either supports or opposes other findings. The present study will definitely add its own dimension. However, one thing stands out clear, from most of the research works cited in this review, the study on note-taking has tended to shift scholars emphasis from investment of resources in the development of instructional materials to investment in instructional environment. More attention is now drawn at or directed to promoting those activities in the student that would induce and maximize his achievement of instructional goals with available materials and thus making instruction learner-centred.

Also from the literature, it would be observed that personality factors and psychological constructs like introversion-extroversion, and attitude have effects on learning outcome. All these variables were examined along with the note-taking strategies in this present study.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter describes the research methodology, including the research design, selection of subjects, the instruments, the data collection and the statistical procedure for data analysis. The study was carried out in two phases - the pilot phase and the main phase.

3.1 Research Design

Basically, the study adopted a quasi-experimental procedure in the two phases of the investigation. The design format is a $3 \times 2 \times 2$ factorial.

The choice of this research design is guided by the possibilities it offers. First, more than one hypothesis about the main effects could be tested effectively in one experiment. This saves the time and energy that would otherwise be expended in carrying out several single factor experiments for the factors involved.

Secondly, the design provides an opportunity to study how

the factors interact to influence the dependent variable thereby allowing for greater generalization than would be possible in one-factor designs.

Furthermore, since the design permits the random assignment of the experimental units to the factor level combinations, it makes matching of such experimental units unnecessary.

Finally, sampling error in the estimation of main and interacting effects can be reduced thereby increasing the power of the significant test by simply increasing the size of the sample in the major experiment (Glass and Stanley, 1970).

3.2 The Variables

Three types of variables, the independent, the intervening and the dependent variables were involved in the experiment. The independent variable was the note-taking strategies which subjects adopted during lecture. They were:

1. Concurrent note-taking with lecture.
2. Following lecturer's prepared note along with lecture.
3. Listening to audio taped lecture only (control group).

Two intervening variables, at two levels each, were also involved in the study. These are attitudinal differences (positive and negative) and personality differences (introversion and extroversion).

The dependent variable was the students' cognitive achievement as measured by two post-tests in Social Studies based on population studies. The first was the Social Studies Immediate Recall Test (SSIRT) while the second was the Social Studies Delayed Recall Test (SSDR1). The two tests were designed by the researcher based on the learning material of the study.

From all the variables examined, the research design is illustrated as in figure 3.1 and the setting of the experiment, based on the research design, is represented in figure 3.2

Figure 3.1

Research Design

Experimental Group	1	X	X1	X2	X3
Experimental Group	2	Y	Y1	Y2	Y3
Control Group	3	Z	Z1	Z2	Z3

Where X is experimental treatment 1 = concurrent note-

taking with lecture.

Y is experimental treatment 2 = following the lecturer's prepared notes.

Z is the control group 3 = Listening only strategy.

X1 Y1 Z1 = pre-treatment tests

X2 Y2 Z2 = immediate recall tests

X3 Y3 Z3 = delayed recall tests

The pre-test served as a measure of the prior familiarity of the subjects with the learning material (population studies) on which the treatment was based.

Figure 3.2 depicts the setting of the experiment based on the design.

Figure 3.2

Analysis of Factors and Cell Layout

TREATMENT GROUPS	ATTITUDINAL GROUPS	PERSONALITY GROUPS					
		EXTRAVERT			INTROVERTS		
		PRETEST	1MM	DEL	PRETEST	IMM	DEL
NOTE-TAKING	POSITIVE	X ₁	X ₂	X ₃	X ₁	X ₂	X ₃
	NEGATIVE	X ₁	X ₂	X ₃	X ₁	X ₂	X ₃
	POSITIVE	Y ₁	Y ₂	Y ₃	Y ₁	Y ₂	Y ₃
	NEGATIVE	Y ₁	Y ₂	Y ₃	Y ₁	Y ₂	Y ₃
LISTENING CONTROL	POSITIVE	Z ₁	Z ₂	Z ₃	Z ₁	Z ₂	Z ₃
	NEGATIVE	Z ₁	Z ₂	Z ₃	Z ₁	Z ₂	Z ₃

*IMM Immediate Posttest

*DEL Delayed Posttest

where X₁ Y₁ Z₁ = Pretest for the different groups
1 1 1

X₂ Y₂ Z₂ = Immediate Recall Test for the
different groups

X₃ Y₃ Z₃ = Delayed Recall Test for the
different groups

3.3 Control of Experimental Biases

Control of experimental biases relates to establishing internal and external validity of the design of the experiment. Internal validity in an experimental study deals with the degree of accuracy of the design while external validity refers to the generalizability of its results. Several factors which usually pose a threat to both validities were controlled for by the design. According to Campbell and Stanley, (1963) Kerlinger (1973) and Luckman (1975) sources of internal validity reside in factors such as history, maturation and instrumentation, especially if there are changes in the calibration of the measuring instrument or in the observer. Other factors include test sensitization, statistical regression, selection bias, experimental mortality and interaction between selection and mortality.

Similarly, external validity can be jeopardized by factors such as reactive or interactive effect of testing, selection bias and experimental variable interactions, reactive effects of experimental arrangement and multiple treatment interference.

Essentially, a pre-test control, such as the present one,

ensures the control of such extraneous factors as history, maturation and test sensitization. All these factors, if present, would equally affect the control group as much as the experimental groups. Instruments used in the pre-post test were not recalibrated and thus this source of invalidation could not have effected any damages. Also the pattern of testing used in this experiment is in consonance with that in vogue for testing achievement in the Nigerian educational system.

The researcher controlled for likely interaction between subjects by collecting the students' own notes (experimental group one) and the lecturer's prepared notes given to subjects (experimental group two), immediately after each lecture period. Also, lectures on each topic were delivered to the different groups, with each group having equal chance of being taught first or last. That is, the period when each group listened to the audio-taped lecture was randomized.

Also, the use of Analysis of covariance statistics took adequate care of possible initial differences among subjects. Pre-test scores were used as covariates in the analysis.

3.4 Sampling of Subjects for Pilot Study

In the pilot study, all the first year Social Studies "majors" in the Osun State College of Education, Ila-Orangun, were requested to respond to the Eysenck Personality Inventory (EPI) and the Students' Attitude to Social Studies Questionnaire (SASSQ). Their responses were scored accordingly.

Based on the scores of each subject, he or she was classified as either extrovert or introvert and as having positive or negative attitude to Social Studies. Thus, there were four categories of subjects - Extrovert with positive attitude, extroverts with negative attitude, introverts with positive attitude and introverts with negative attitude.

On the next visit, that is three days later, the selected subjects were given a pre-test (SSPT). The pre-test scores were recorded for all the subjects selected for the pilot study.

On the whole 60 subjects were selected to take part in the pilot study. They were grouped in 20 subjects each under the three note-taking strategies, of concurrent note-taking,

note following and listening only (control group). In each of the 20 members, 5 were extroverts with positive attitude, 5 extroverts with negative attitude, 5 introverts with positive attitude and 5 introverts with negative attitude.

The overall sample of 60 subjects was made up of 30 extroverts (15 with positive and 15 with negative attitude) as well as 30 introverts (15 with positive and 15 with negative attitude) towards Social Studies. Table 3.1 illustrates the distribution of sample for the pilot study.

Table 3.1:

Distribution of Sample for Pilot Study

TREATMENT GROUP	ATTITUDINAL GROUP	PERSONALITY GROUP		TOTAL
		EXTRAVERT	INTROVERTS	
NOTE-TAKING 20	POSITIVE	5	5	10
	NEGATIVE	5	5	10
NOTE FOLLOWING 20	POSITIVE	5	5	10
	NEGATIVE	5	5	10
LISTENING (CONTROL) 20	POSITIVE	5	5	10
	NEGATIVE	5	5	10
	TOTAL	30	30	60

3.4.1 Samples for the Main Study

The subjects for the main study were sampled from the first year students, offering Social Studies as one of their major subjects in three Colleges of Education, with two in Oyo State and one in Osun State. The subjects were selected in line with the same procedure adopted in the pilot study.

Subjects were taken as intact groups and were assigned to experimental and control groups randomly. Through the process, the subjects in St. Andrew's College of Education, Oyo, became the experimental group one while those in Osun State College of Education, Ilesa, became experimental group two and Federal College of Education (Special), Oyo served as the control group.

There was a total number of ninety-six (96) subjects in all the three groups, that is thirty-two subjects served in each of the three groups. The 96 subjects, selected for the three groups were made up of 48 extroverts (24 with positive attitude and 24 with negative attitude) as well as 48 introverts (24 with positive attitude and 24 with negative attitude) Table 3.4 shows the distribution of subjects for the main study.

Table 3.2

Distribution of Sample for the Main Study

TREATMENT GROUP	ATTITUDINAL GROUP	PERSONALITY GROUP		TOTAL
		EXTRAVERT	INTROVERTS	
NOTE-TAKING 32	POSITIVE	8	8	16
	NEGATIVE	8	8	16
NOTE FOLLOWING 32	POSITIVE	8	8	16
	NEGATIVE	8	8	16
LISTENING (CONTROL) 32	POSITIVE	8	8	16
	NEGATIVE	8	8	16
	TOTAL	48	48	96

3.5 Research Instruments

Six major research instruments were used in the study.

They are as follows:

- (a) Eysenck Personality Inventory (EPI)
- (b) Students' Attitude to Social Studies Questionnaire (SASSQ).
- (c) Prepared Lecture Notes
- (d) Social Studies Pretest (SSPT)

- (e) Social Studies Immediate Recall Test (SSIRT)
- (f) Social Studies Delayed Recall Test (SSDRT)

3.6 Eysenck Personality Inventory

Subjects' tendency to be extroverted was measured using Eysenck Personality Inventory (EPI). The Eysenck Personality Inventory has gained universal acceptability. It has been investigated for its factorial structure and had several times been updated in England (Eysenck and Eysenck, 1968) where it had originally been standardised. Different other cultures such as Japan (Tawaki et al 1977, 1990), New Zealand (Saklofske and Eysenck, 1978); Australia (Eysenck et al, 1980) have also found it relevant and useful. In Africa, evidence concerning its appropriateness and validity have been given for Egypt (Ibrahim, 1982) and Nigeria (Eysenck et al 1977); Boyinbode, 1988) among others. These studies yielded positive loading on most of the items. It was therefore, adopted for use in this study.

The 24 items in the inventory were statements to which respondents answered 'Yes', 'No', or 'Undecided'. These responses were scored in the order of 1 for 'Yes', 0 for 'No' and 1/2 for 'Undecided'. With this scoring procedure, it is

stipulated that the maximum score obtainable is twenty-four (24) while the minimum is zero (0). A score of twelve and a half (12 1/2) marks the boundary between introversion and extroversion.

3.6.1 Validity of Eysenck Personality Inventory (EPI)

Despite the fact that this scale has been attested to as valid and relevant to the Nigerian culture, an attempt was still made to re-establish the validity of the instrument.

Two psychologists in the University of Ibadan and two lecturers in Education at the Federal College of Education (Special) Oyo were requested to rate each item on a 3-point scale 'Low', 'Medium' and 'High' as to its relevance to students tendency to extroversion. This exercise produced high inter-rater correlation. Sixteen of the items were rated as high by all the raters, 6 as medium and it was only in two items where two of the raters, disagreed with the others. Thus, the scale was accepted as highly relevant and usable for this experiment. To be further assured of the validity of the EPI, the scale was administered simultaneously with the self-esteem scale of Adolescent Personality Data Inventory (APDI) by Akinboye. The results obtained from the two inventions

were correlated, using the Pearson Product-Moment Correlation Method. The exercise yielded a coefficient of .62 which is a sufficiently high index of validity of the scale for the construct measured.

3.6.2 Reliability of Eysenck Personality Inventory (EPI)

The 24 item inventory was presented to sixty (60) students of Osun State College of Education, Ila-Orangun, on two occasions with an interval of two weeks. A test-retest method was made to obtain its reliability coefficient. By applying the Product Moment Correlation formula, a reliability coefficient of .76 was obtained.

This high correlation coefficient obtained, further assured of the high reliability of the scale.

3.7 Student' Attitude to Social Studies Questionnaire (SASSQ)

The Students' Attitude to Social Studies Questionnaire was constructed and validated by the investigator. The evaluative instrument consists of thirty-two (32) statements presented on a 4-point Likert Scale with responses consisting of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD). Positive and Negative statements within the

scale were interposed in the arrangement in order to test for acquiescence bias (Tuckman, 1975).

Acquiescence bias occurs when a test predetermines to respond in a particular way to whatever question is asked.

The attitude scale consists of items measuring students' attitude to Social Studies in the following subscales.

1. Attitude to Social Studies as a subject.
2. Attitude to Social Studies objectives and content.
3. Attitude to Social Studies teacher and methodology.
4. Attitude to Social Studies resources.
5. Attitude to career in Social Studies.
6. Attitude to outcomes of Social Studies.

The scoring procedure took the form of scoring positive items differently from the negative ones. The positive items (3, 5, 6, 7, 8, 10, 11, 14, 15, 17, 18, 19, 20, 21, 24, 25, 27, 29, 30 and 32) were scored as follows: Strongly Agree = 4; Agree = 3; Disagree = 2; Strongly Disagree = 1. The negative statement (1, 2, 4, 9, 12, 13, 16, 22, 23, 26, 28 and 31) were scored in the reversed order - Strongly Disagree = 4; Disagree = 3; Agree = 2; and Strongly Agree = 1. On this basis, a score of 80 and above on the 32 items indicates positive attitude while any

score below eighty (80) is taken as indicating a negative attitude towards Social Studies.

3.7.1 Validity of the Students' Attitude to Social Studies Questionnaire (SASSQ)

The Students' Attitude to Social Studies Questionnaire (SASSQ) was given both facial and content validation. The draft of the questionnaire was first given to two lecturers in Social Studies in a College of Education, a University lecturer in Social Studies education and an expert in construction of questionnaire and rating scales. They were requested to criticise the items and make suggestions. The necessary amendments were effected as suggested by these experts.

The final draft of the questionnaire consisting of 40 items was tried on a sample of sixty (60) year one students, majoring in Social Studies, at Federal College of Education (Special) Oyo. They were asked to respond to the questionnaire. Their responses were scored and analyzed. Items which might have proved ambiguous for students to understand were further modified while ensuring that the meanings of the statements were not altered.

To test for the internal consistency of the scale, the Cronbach Coefficient Alpha formula was applied to the result of the trial testing. The test yielded a coefficient alpha of 0.71. According to Cronbach, the coefficient alpha is an index which shows the extent to which items on a scale hang together or measure the same construct. The item-total item correlation was calculated to indicate what each item contributes to the construct measured.

Based on this computation, 8 items were found to possess negative Y1 (y-1) correlation, that is, they had negative loadings. They were thus deleted from the forty items, leaving a total of 32 items on the final scale. The 32 items were finally selected for use (see appendix II). Also the contributions of each item to the construct measured is illustrated in Appendix II).

3.7.2 Reliability of the Students' Attitude to Social Studies Questionnaire (SASSQ)

After validation, the attitude scale was processed for reliability. Ato and Wilkson's (1979) advice that if further reliability test is to be carried out on a scale by the split-half method, the number of positive and negative statements in

each half of the scale must be equal, was heeded. The items were so arranged such that equal number of negative items and positive items were contained in each half. The students scale was then subjected to split-half reliability test and this test yielded a coefficient of 0.79 which is considered high enough for a teacher-made test.

3.8 Prepared Lecture Notes

A set of six simple structured notes covering all the topics discussed during the whole treatment period was prepared. Each note contains the main points for discussion sequentially arranged with only brief explanation where necessary.

To validate the lecture notes, three copies of each were prepared and distributed to three Social Studies lecturers in St. Andrew's College of Education, Oyo. These were lecturers who had taught the course "Population Studies" at least once or twice at the level of the target population of this research. The lecturers were requested to:

- (i) read through and comment on the factual accuracy of the notes;
- (ii) criticize the language and comment on its

appropriateness

for the target population;

- (iii) suggest additional information that could make the lecture more understandable to the subjects, if any.

The copies of the draft were collected from the lecturers and a synthesis of the lecturers' corrections and/or suggestions culminated in the final draft of the lecture note (see Appendix 5).

3.9 Social Studies Pretest (SSPT)

The Social Studies Pre-test (SSPT) in a 50-item test covering the important concepts in the six topics of the course - Population studies. The test contained basically the same test items as those that were later used as the Social Studies Delayed Recall Test.

3.9.1 Construction of (SSPT)

The Social Studies Pre-test consists of multiple choice objective items with four options. They are based on the contents of the learning material for the study and they cover the following topics:

- (a) The concept of population, growth and structure.
- (b) Factors of population distribution and movement.

- (c) Sources of population data.
- (d) Population policy in Nigeria.
- (e) Advantages and disadvantages of large population
- (f) The Malthusian population theory and resources.

The topics are the contents of a one unit Social Studies course on population studies at 100 level of the Nigeria Certificate in Education (NCE) programme. According to Nwana (1979) an achievement test based on the whole contents that were taught may be assumed to have curricular or content validity.

The researcher reviewed the contents and the objectives to be tested and then generated one hundred (100) multiple choice objective test items on the learning material. After a period of two weeks, these items were subjected to self-editing as a prelude to editing by other experts. During the self-editing the researcher discarded with (20) twenty of the items. The remaining eighty (80) items were typed out for validation exercise.

3.9.2 Validity of the SSPT

As Thorndike and Elizabeth (1977) have stressed content validity is important for measures of achievement. Therefore,

the 80 multiple choice items and the learning material were sent to three Social Studies lecturers in the Federal College of Education (Special), Oyo and two experts in test construction in the Institute of Education, University of Ibadan, Ibadan. They were requested to:

- (i) point out factual error (if any) based on the item stem and the options provided;
- (ii) indicate whether the complete item, an option or some of the options should be deleted or modified;
- (iii) indicate the type of modification necessary, if any;
- (iv) indicate the items found suitable for the level of students under study;
- (v) state whether the items relate to the course content submitted along with the test items.

This non-empirical validation reduced the items to sixty. based on the suggestion made by the experts in Social Studies and test construction to whom the test was circulated.

Nwana (1979) Abodunrin (1988) have both suggested that questions should be selected from all sections of the learning material, test the desired objectives and the number of

questions set on each topic should reflect the relative 'weight' attached to the topic - (Gronlund, 1976). Both suggestions were found pertinent and were followed. With this in mind, 60 items were finally selected.

The sixty (60) 'qualified' items were found to be well distributed among the topics and objectives desired to be measured by the test. This is shown on the table of specification in Table IV in the Appendix. This simplified objective scheme devised by the Educational Testing Service (ETS) in the United States of America, was used for the test item to be further assured of the content validity of the test. The scheme which has three categories of objectives - Remembering, Understanding and Thinking - has been successfully adopted by Bello (1979); Teibo (1981) and Ogunsola (1990).

To ensure that the items were appropriately distributed on the table of specification, the investigator sent copies of the table to two test construction experts for their comments. Both experts endorsed the placements or distribution of the items as made by the investigator.

For empirical validation of the items, a sample of sixty

(60) students of Osun State College of Education, Ila-Orangun was used for trial-testing the items. The students were instructed to attempt all the test items under normal examination conditions. Their responses were scored on the basis of right or wrong.

3.9.3 Determination of the Difficulty indices of the SSPT

Item analysis was carried out to examine the difficulty indices of the test items. The difficulty index of an item is obtained by dividing the number of candidates who got each item right by the total number of candidates who attempted the item at the end of the test administration. (Gronlund, 1976).

$$\text{Difficulty Index} = \frac{\text{No. of candidates getting the Item right}}{\text{Total Number of candidates}}$$

The result of the analysis is presented in the Appendix III. The items with low difficulty indices were deleted. The deletion of these items with low facility indices left the SSPT with 50 items.

3.9.4 Reliability of SSPT

The fifty (50) objective test items finally selected for the achievement tests were trial-tested on the sample of 60

students the second time. This was two weeks after the first administration. The students' responses were also scored on the basis of right or wrong and the result was analyzed. Scores from the two administrations were analyzed using the test-retest approach.

This became necessary in light of Butt's (1964) suggestion that comparison of the individual scores on two attempts on an item is the best indication of the stability of the test instrument. A correlation coefficient of 0.75 was obtained, which shows that the test is reliable.

3.10 Social Studies Immediate Recall Test (SSIRT)

The Social Studies Immediate Recall Test is a test which has six subtests. Each subtest was based on the contents of each topic taught within a lecture period and the number of test items in each subtest was determined by the number of concepts in each topic. The questions in the subtests were as follows: topic 1, ten items; topic 2, ten items; topic 3, ten items; topic 4, seven items; topic 5, five items and topic 6, eight items, making a total of 50 items in all.

3.11 Social Studies Delayed Recall Test (SSDRT)

The Social Studies Delayed Recall Test (SSDRT) is a single test containing the 50 items selected from the different subject of the Social Studies Immediate Recall Test. The items were, however, re-arranged in random order and the options given for each item were similarly displaced. This was basically to reduce students' test wiseness. Thus it could be taken that all the processes of establishing the validity and reliability undertaken for the SSPT were equally applicable to the SSDRT.

3.12 Differences Between the SSIRT and SSDRT

These two achievement tests used in the study are made up of the same basic items. However, they differ in the following ways:

- (i) The SSIRT was made up by six small tests of different sizes while the SSDRT was one single 50 item test.
- (ii) Each subset (or part) of the SSIRT was administered

since the items making it up are those relevant to that particular topic of discussion alone.

- (iii) The SSDRT was made up by items based on the six topics discussed during the whole period of the experiment.

However, the items were arranged in random order.

- (iv) The positions of the options of the multiple choice objective items were re-arranged in the SSDRT thus making the position of the correct options different from what it was in the SSIRT and thereby reducing the effect of test-wiseness.

- (v) Score on the SSIRT subtests were added together to form subjects' total score on SSIRT, while the scores on all the items of SSDRT served as the total score.

3.13 The Pilot Study

A pilot study where all the procedures of the main study were trial-tested was conducted. The pilot study took place at the Osun State College of Education, Ila-Orangun.

3.13.1 Need for the Pilot Study

As Churchill (1977) opined, the pre-test is the most inexpensive insurance the researcher can buy to ensure the success of his questionnaire and other research instruments. Hence, the pilot study was essential to the investigation because of the following reasons:

- (a) to provide empirical information in the validity and reliability of the research instruments;
- (b) to discover any constraint to the workability of the research design with a view to identifying and correcting any flaws detected.
- (c) to provide opportunity for a trial analysis of the data collected.
- (d) to give opportunity for identifying administrative and logistic problems that might likely be encountered during the main study phase.

3.13.2 Procedure of the Pilot Study

The pilot study was carried out in February 1994 at the Osun State College of Education, Ila-Orangun.

Based on the selection of sample procedure (as shown in section 3.4 and on table 3.3) the Social Studies pretest

(SSPT) was administered on the selected subjects.

Since the achievement pre-test was a criterion referenced test rather than a norm referenced one, (Nwana, 1979), all the subjects were given sufficient time to attempt all the questions. The responses were scored and the total score for each subject was recorded as the pre-test score.

The time table for lectures was arranged through balloting system. No one group had the privilege of being taught permanently first or the last. Each session lasted one hour and the three groups were taught the same topic each week. Lecture period lasted six weeks.

Lectures were delivered through the audio tape to ensure the comparability of information given and the rate of delivery of lecture. At the beginning of each lecture, materials were distributed to members of the group. The experimental group 1, the note-taking group was given writing sheets and biro. The note following group was given the lecture's prepared notes and biro, while the listening only group (control group) was not given any material but was instructed to listen attentively and note the important or

main points of the lecture. At the end of each lecture, material so distributed and used were collected from the subjects before the Social Studies Immediate Recall Test (SSIRT) was administered. No subject was allowed to take away any material used for taking notes or jotting points during the audio taped lecture. This was to prevent contamination.

The Social Studies Delayed Recall Test (SSDRT) was administered a week after the last lecture.

3.13.3 Results of the Pilot Study

The scores of the subjects on the pretest and post-tests were processed using the analysis of covariance statistic. The results which showed that the students performed poorly in the pretest, indicated some improvement in the immediate post test (SSIRT). The experimental group 2, that is the students that followed prepared notes performed best in the immediate posttest while the students that took concurrent notes, experimental group 1, performed best on the delayed posttest (SSDRT).

On the basis of the observation made during the pilot study certain information was gained. This includes:

- (i) that the research design was found to be appropriate

and the procedure of selection of subjects was adequate;

- (ii) that the treatment had significant effect on the subjects performances at the delayed posttest.
- (iii) that attitudinal differences reflected differences in achievement at the delayed level of recall while personality differences produced no significant differences at both the immediate and delayed recall test..
- (iv) that the pilot study provided additional information on the validity and reliability of the research instruments. It particularly revealed that the prepared lecture notes appeared too long and had to be modified to reduce subjects' reading during lecture and to have enough time for listening.

Before the main study, the contents of the prepared lecture notes were modified, though the basic concepts were not reduced, thus leaving only the essential points listed under the appropriate headings.

Two Social Studies lecturers from Osun State College of Education, Ila-Orangun assisted in going over the modified lecture notes. Their advice and suggestions were duly incorporated into the notes.

3.14 The Main Study

The method and procedure adopted during the pilot study was also used for the main study. The main study was, however, undertaken in three Colleges of Education. The experimental group 1 was in St. Andrew's Colleges of Education, Oyo, the experimental group 2 in Osun State College of Education, Ilesa while the control group was in Federal College of Education (Special), Oyo.

3.14.1 Selection of Subjects for the Main Study

The subjects for the main study were sampled from the first year students, taking Social Studies as their major subject in three Colleges of Education named above. The assignment of each College to specific treatment group was randomly done through balloting. The subjects were selected in line with the same procedure adopted in the pilot study. However, subjects for the main study were greater in number than those selected for the pilot study. In all, there were

ninety-six (96) subjects selected for the study. This was made up of 48 extrovert (24 with positive and 24 with negative attitude) as well as 48 introverts (24 with positive and 24 with negative attitude towards Social Studies).

Table 3.3 shows the distribution of subjects for the main study.

Table 3.3

Distribution of Sample for the Main Study

TREATMENT GROUP	ATTITUDINAL GROUP	PERSONALITY GROUP		TOTAL
		EXTRAVERT	INTROVERTS	
NOTE-TAKING 32	POSITIVE	8	8	16
	NEGATIVE	8	8	16
NOTE FOLLOWING 32	POSITIVE	8	8	16
	NEGATIVE	8	8	16
LISTENING (CONTROL) 32	POSITIVE	8	8	16
	NEGATIVE	8	8	16
	TOTAL	48	48	96

3.14.2 Research Instruments

The same instruments used in the pilot study phase of the investigation were adopted wholesale during the main study.

These instruments are the Eysenck Personality Inventory (EPI), the Students' Attitude to Social Studies Questionnaire (SASSQ), the Social Studies Pretest (SSPT), the Social Studies Immediate Recall Rest (SSIRT), the Social Studies Delayed Recall Test (SSDRT) and the Prepared Lecture Notes. It was only the prepared lecture notes that were slightly modified as a result of the findings of the pilot study. The reading materials was reduced thus students' reading task during lecture was reduced to enable them concentrate more on listening. However, the modification did not reduce or alter the basic contents and sequence of discussion of the learning material.

The administration of the various instruments, the use of the audio tapes and the administration of achievement tests, followed strictly the pattern adopted during the pilot study. Similarly, the scoring of the subjects' response to the instruments was carried out in line with the prescribed schemes of the authors and as done during the pilot study.

3.15 Treatment Implementation

The different note-taking groups were taught in separate colleges through the use of audio tape. The researcher gave

brief instruction or explanation at the beginning of each lecture, distributed materials where applicable before turning on the radio. The researcher and one Social Studies Lecturer from each college stayed at the back of the class through out the lecture delivery time. At the beginning of each lecture both the researcher and the 'helper' distributed needed materials and collected same at the end of lecture. This was to ensure that the used materials were not taken out of the classrooms.

The Social Studies Immediate Recall Test (SSIRT) followed each lecture as expected while the Social Studies Delayed Recall Test (SSDRT) came summatively a week after the last lecture. Scores in each of the subsets of the Social Studies Immediate Recall Test (SSIRT) were recorded and later collated to form a whole test-score while the scores on the Social Studies Delayed Recall Test (SSDRT) formed another score entity.

At the end, three separate scores were obtained for each subject, a pretest score, an immediate test score, and a delayed posttest score. The pretest scores were compared first with the immediate posttest score and later with the

delayed posttest scores. There was also the comparison of the immediate and the delayed posttest scores.

3.16 Analysis of Result of the Main Study

The scores obtained from the experiment were coded by the researcher before computer analysis. Descriptive statistics such as Mean and Standard Deviation were calculated before the analysis of covariance (ANCOVA) statistics was applied. The pretest score served as the covariate, in each of the comparisons, with the immediate and delayed posttest scores.

Further test or post hoc tests were also carried out where significant differences were obtained. Tukey Honestly Significant Difference Method was used for the post hoc test. The results are presented in chapter four of the write up.

CHAPTER FOUR

DATA ANALYSIS AND PRESENTATION OF THE RESULTS

4.0 Introduction

This chapter deals with the analysis of data and the presentation of the results of the study. Students' scores were arranged and organised. Frequency counts, means and standard deviation were used as descriptive statistics while analysis of covariance was used as inferential statistics. Tukey Honestly Significant Difference formula was applied as the post hoc test for multiple comparison of means.

Eight Null Hypothesis were tested to determine the main and the interactive effects of the independent variables on the dependent variables. The level of significance was set at $P < 0.05$. The results are as presented in the tables below.

4.1 Hypothesis One (Ho1)

There will be no statistically significant effect of the note-taking strategies on the students' achievement in the immediate recall test.

The focus of this hypothesis is the effect which the

different not-taking strategies had on the students' achievement during the immediate recall test. The descriptive statistics of the result are shown on table 4.1:

Table 4.1

Descriptive Statistics of Students Immediate Post Test Scores Under the Three Note-Taking Strategies

	NOTE-TAKING			NOTE FOLLOWING			CONTROL		
	N	X	S.D	N	X	S.D	N	X	S.D
Immediate Post test	32	10.156	3.55	32	11.343	4.12	32	9.75	3.66

Table 4.1 shows the immediate post test means and standard deviation of the gain scores. All the three strategy-groups had appreciably high posttest scores. The magnitudes of achievement, however, would appear wider between the two experimental groups on one side and control group on the other.

Specifically, experimental group 2, the note following group, performed best, $X = 11.343$, followed by the experimental group 1, the concurrent note-taking group with $X = 10.156$ while the control group had a mean, X of 9.75; thus $X_2 > X_1 > X_3$.

To determine if any statistically significant difference exist among the mean scores of each of the strategy groups, an analysis of covariance was computed. This is presented in Table 4.2:

Table 4.2

Analysis of Covariance of Immediate Post Test Scores for the Three Note-Taking Groups

Source of Variation	SS	DF	MS	F	P
Covariance (pretest)	563.705	1	563.703	71.656	000
Main Effect Strategy	91.889	2	45.945	5.840	004**
Explained	655.593	3	218.531	27.779	000
Residual	723.741	92	7.867		
Total	1379.333	95	14.519		

** Significant at $P < .05$ level.

Table 4.2 above reveals a statistically significant difference in the subjects' performance among the three note-taking strategies ($F_{2, 92} = 5.840$ $P < .004$) and with this F. value, the decision was to reject the H_0 which states that there is no statistically significant difference in the Social Studies immediate posttest scores of the subjects under the three note-taking strategies. This is because significant differences exist among the three groups.

Table 4.3

Multiple Classification Analysis of Covariance on the Immediate Post-Test Scores

Variable +Category	N	Unadjusted		Adjusted for Independent + Covariate	
		Deviation	Eta	Deviation	Beta
Note-taking Strategies					
1. Taking Notes	32	-.26		-.17	
2. Following notes	32	.93		1.28	
3. Listening notes (control)	32	-.67		-1.11	
			.18		.26
Multiple R ²					.475
Multiple R					.689

The Multiple Classification analysis in Table 4.3 shows a result similar to the analysis of covariance in Table 4.2. From the table, the grand mean is 10.417 while the control group has an adjusted mean of 10.86 (9.75 + 1.11). The experimental group 2 has an adjusted mean of 10.326 (11.345 - 1.28) while the note-taking group has an adjusted mean of

10.063. (10.156-.17). The multiple R on table 4.3 reveals that only 48% (68²) of the variation of the immediate posttest scores is accounted for by the different note-taking strategies.

Based on all results, as shown in tables 4.1, 4.2 and 4.3, the Null Hypothesis of a significant difference is rejected.

An attempt to further probe into the source of the difference was carried out by using the Tukey Honestly Significant Difference formula for posterior multiple comparison of the mean scores of the different strategy groups. The result is shown in table 4.4

Table 4.4

Multiple Comparison of Mean Scores for the Immediate Posttest of the Different Strategy Groups

Strategies Groups	1	2	3
X	10.156	11.343	9.75
Note-taking 1	-	1.69	.579
Note Following 2		-	2.27*
Control 3			-

*Significant a $P < .05$ level critical value tab. = 2.131

A statistically significant difference between the scores of subjects in the three different strategies was found between strategy two and three while there were no statistically significant differences between group 1 and 2 and between 1 and 3.

4.2 Hypothesis Two (Ho2)

This hypothesis states that there is no significant difference in the Social Studies delayed posttest scores of subjects under the three note-taking strategies ($\bar{X}_1 = \bar{X}_2 =$

\bar{X}_3)

Table 4.5

Descriptive Statistics of Subjects' Delayed Posttest Scores Under the Three Note-Taking Strategies

	NOTE-TAKING			NOTE FOLLOWING			CONTROL		
	N	\bar{X}	S.D	N	\bar{X}	S.D	N	\bar{X}	S.D
Delayed Posttest	32	12.84	5.05	32	10.03	4.97	32	9.63	3.68

The effect of the different note-taking strategies on the subjects performance in the delayed posttest is depicted in table 4.5 above. With 32 subjects in each note-taking group,

the experi-mental group 1 has the highest mean ($\bar{X} = 12.844$) followed by group II with a mean of 10.031. The control group III has the lowest mean ($\bar{X} = 9.65$).

Table 4.6

Analysis of Covariance of the Delayed Posttest Scores for the Three Note-Taking Strategies

Source of Variation	SS	DF	MS	F	P
Covariate (pretest)	590.257	1	590.257	40.195	000
Main Effect					
Strategy	231.409	2	115.705	7.879	001**
Explained	821.667	3	273.889	18.651	000
Residual	1350.990	92	14.683		
Total	2172.656	95	22.870		

**Significant at $P < .05$ level

The analysis of covariance was performed on the subjects pretest and delayed posttest as shown on table 4.6 above. The F-value associated with effect of the strategies on the delayed posttest of each group is significant ($F_{2, 92} = 7.879$, $P < .001$). The Null Hypothesis of no statistically significant difference is hereby rejected.

Table 4.7 shows the Multiple Classification Analysis. From this table, it can be found that the students under the note-taking strategy had a better achievement on the delayed test, followed by the note following group and the least was the control group. The adjusted for independent and covariate deviation were 2.09, -.45 and -1.64 respectively.

Table 4.7

Multiple Classification Analysis of the Analysis of Covariance
on the Delayed Posttest Scores

Grand Mean = 10.844

Variable +Category	N	Unadjusted		Adjusted for Independent + Covariance	
		Deviation	Eta	Deviation	Beta
Note-taking Strategies					
1. Taking Notes	32	2.00		2.09	
2. Following notes	32	-0.81		-.45	
3. Listening notes (control)	32	-1.19		-1.64	
			.30		.33
Multiple R					.378
Multiple R					.615

With the indication of a statistically significant difference among the delayed posttest scores of the groups shown in tables 4.6 and 4.7, a posterior contrast test at 0.05 level was conducted through the Tukey Honestly Significant Difference Method. The result is shown in the Multiple Comparison table 4.8.

Table 4.8

Multiple Comparison of Means Scores for the Different Strategy

Strategies Groups	Groups		
	1	2	3
X	12.84	10.031	9.63
Note taking	1	-	2.936*
Note Following	2	-	.397
Control	3		-

*Significant at $P < .05$ level tab. = 2.131

Table 4.8 shows that significant differences exist between the performances of the two experimental groups on one hand, and between experimental group one and the control group. The largest difference, 3.334* was obtained between

the experimental group one and the control group.

4.3 Hypothesis Three Ho3

There will be no statistically significant effect of note-taking strategies and the attitudinal differences on the students' achievement in the immediate recall test.

Table 4.9

Descriptive Statistics of Students Immediate Posttest Scores of the Different Note-Taking Groups Under Their Attitudinal Group

ATTITUDI- NAL GROUPS	STRATEGIES								
	NOTE-TAKING			NOTE FOLLOWING			CONTROL		
	N	X	S.D	N	X	S.D	N	X	S.D
POSITIVE	16	11.44	3.26	16	11.75	3.87	16	10.25	3.91
NEGATIVE	16	8.88	3.46	16	10.94	4.45	16	9.25	3.45

Table 4.9 displays the means and the standard deviations of the posttest scores of the subjects under the three note-taking groups and in their different attitudinal groups. Subjects with positive attitude, under the note following strategy had the highest mean score (11.75). This is closely followed by those with positive attitude under the note-taking strategy with a mean score of 11.44. Under each of the three groups, those with positive attitude towards social studies

had higher achievement test scores than those with negative attitude.

Taking the subjects with negative attitude as a group, the note following strategy subgroup had the highest mean (10.94) followed by the control (9.25) while the note-taking group had the lowest mean. (8.88) $\bar{X}_2 > \bar{X}_3 > \bar{X}_1$. But for the subjects with positive attitude it was $\bar{X}_2 > \bar{X}_1 > \bar{X}_3$.

Table 4.10

Two-way Analysis of Covariance of the Immediate Posttest Scores of the Different Attitudinal Groups Under the Three Note-Taking Strategies

Source of Variation	SS	DF	MS	F	P
Covariance (pretest)	563.703	1	563.703	70.787	.000
Main Effect Strategy	91.383	2	45.692	5.738	.005*
Attitude	.368	1	.368	0.46	.830ns
2 Way Interactions					
Strategy X Attitude	14.631	2	7.315	.919	.403ns
Explained	670.591	5	111.765	14.035	.000
Residual	708.742	90	7.963		
Total	1379.333	95	14.519		

** Significant at P <.05 level.

(ns) Not Significant P<.05 level.

The effects of the note-taking strategies, interacting with the different attitudinal dispositions were tested with a two way analysis of covariance. From table 4.10 above, it was observed that strategy as a main effect produced significant effect ($F(2.93) = 5.738 P < .05$) but attitude did not produce significant main effect ($F(2.89) = 0.046 P < .05$). Similarly the two way interaction of the strategy and the attitudinal differences did not produce significant effect ($F(2.89) = 0.919 P < .05$). With this F - value the hypothesis which states that there will be no significant interactive effect is therefore accepted. At the immediate posttest that interaction of strategy and attitude produced no significant effect.

A further attempt to analyse this result led to the computation of the Multiple Classification of the 3×2 analysis of covariance table 4.11.

Table 4.11

Multiple Classification of the 3 x 2 Analysis of Covariance
on Students Immediate Posttest Scores Recall Test
 Grand Mean 10.417

Variable +Category	N	Unadjusted		Adjusted for Independent + Covariance	
		Deviation	Eta	Deviation	Beta
Note-taking Strategies					
1. Taking Notes	32	-.26		-.17	
2. Following notes	32	.93		1.28	
3. Listening notes (control)	32	-.67		-1.11	
			.18		.26
Attitude					
Positive	48	-.73		-.06	
Negative	48	.73		.06	
			.19		.02
Multiple R ²					.476
Multiple R					.690

From the Multiple Classification Analysis table 4.11 it is observed that the computed beta for note-taking is .26 and that of attitude is .02. This indicates that as distinct factors strategy and attitude explained only 6.76% (.26) and .4% (.02) of the observed variance respectively. With these beta weights it could be observed that note-taking strategy contributed more to the variance than attitude at the immediate recall test.

4.4 Hypothesis Four (Ho4)

There will be no statistically significant effect of note-taking strategy and attitudinal differences on the students' achievement in the delayed recall test.

The descriptive statistics which depicts the effect of note-taking strategies and attitudinal differences at the delayed recall test is as shown on table 4.12

Table 4.12

Descriptive Statistic of Students Delayed Posttest Scores
According to the Different Attitudinal Groups Under Their
Note-Taking Strategies

ATTITUDI- NAL GROUPS	STRATEGIES								
	NOTE-TAKING			NOTE FOLLOWING			CONTROL		
	N	X	S.D	N	X	S.D	N	X	S.D
POSITIVE	16	13.81	4.26	16	12.00	3.75	16	9.00	3.2
NEGATIVE	16	11.88	3.7	16	8.05	3.29	16	10.31	3.34

Table 4.12 shows that in the two experimental groups, subjects with positive attitude performed better than their counterparts with negative attitudes towards Social Studies. In the experimental group 1 the 'positives' had a mean of 13.81 as against the 'negatives' with 11.88. Similarly in experimental group 2, the subjects with positive attitudes had a mean score of 12.00 while those with negative attitudes had 8.05. An interesting result, however, is obtained from the control group where those with negative attitude outscored those with positive attitude viz. 10.31: 9.00 respectively.

Table 4.13

Two-Way Analysis of Covariance of the Delayed Posttest Scores of the Different Attitudinal Groups Under Different Note-Taking Strategies

Source of Variation	SS	DF	MS	F	P
Covariance (pretest)	590.257	1	590.257	50.824	.000
Main Effect Strategy	239.350	2	119.675	10.305	.000*
Attitude	213.654	1	213.654	18.3976	.000*
2 Way Interactions					
Strategy X Attitude	103.720	2	51.860	4.465	.014*
Explained	1139.040	5	189.840	16.346	.000
Residual	1033.616	90	11.614		
Total	2172.656	95	22.870		

** Significant at P <.05 level.

The 3 x 2 analysis of covariance table 4.13 shows strategy and attitude as main effects, are very significant. The interactive effect of the note-taking strategies and the attitudinal difference is also significant. With an F-value of (F(2.90) = 4.465 P<0.05) the interaction of the note-taking strategies and the attitudinal differences had significant effect on

subjects achievement at the delayed posttest level. The two main effect also produced significant effect as well.

Additional information is obtained from the Multiple Classification Analysis (MCA) in table 4.14. At this posttest, the students with positive attitude had an adjusted mean score of 12.414 while those with negative attitude had an adjusted mean score of 9.274. The Beta scores show that at the delayed posttest attitude contributed 10.89% (.33) of the observed variance. Note-taking strategy also contributed similar proportion of variance:

UNIVERSITY OF IBADAN LIBRARY

Table 4.14

Multiple Classification Analysis of the 3 x 2 Analysis of Covariance of the Interaction of Strategy and Attitude on Students Achievement at the Delayed Recall Test

Grand Mean 10.844

Variable +Category	N	Unadjusted		Adjusted for Independent + Covariance	
		Deviation	Eta	Deviation	Beta
Note-taking Strategies					
1. Taking Notes	32	2.00		2.10	
2. Following notes	32	-.81		-.39	
3. Listening notes (control)	32	-1.19		-1.71	
			.30		.33
Attitude					
Positive	48	-.76		1.55	
Negative	48	.76		-1.55	
					.33
Multiple R ²					.477
Multiple R					.690

From the above table 4.14 strategy and attitude contributed equally to the variance observed. Based on the information from

tables 4.12 to 4.14 the Null hypothesis is hereby rejected. There is significant effect of the interaction of the note-taking strategies and attitudinal differences in the achievement test scores at the delayed recall test.

For a post hoc test of the source of the significant interaction effect the Tukey Honestly Significant Difference test is applied and the result is presented on table 4.15.

Table 4.15

Multiple Comparison of Mean Scores for the Different Attitudinal and Note-taking Groups

ATTITUDINAL GROUP	1+	2+	3+	1-	2-	3-
\bar{X}	13.81	12.00	9.00	11.88	8.05	10.31
Exp. I Positive (1+)		2.493*	6.626*	2.658*	7.935*	4.822*
Exp. II Positive (2+)			4.133*	.165	5.442*	2.328*
Control Positive (3+)				3.96*	1.308	1.085
Exp. I Negative (1-)					5.216*	2.162*
Exp. II Negative (2-)						3.113*
Control Negative (3-)						-

*Significant at $P < .05$ level (tab. 2.131)

As shown above in table 4.15, significant difference exist between groups when the different attitudes are crossed with different note-taking strategies. For example the subjects with positive attitude to Social Studies in the note-taking group (Experimental group 1 'positive') and those with negative attitude using the same strategy (Experimental group 1 - 'negative') had significantly different mean scores. There is also a significant difference between the pairs of those with positive attitude under strategy one and those with negative attitude in the control group. (see 1 and 2, 1 and 3, 1 and 4, 1 and 5, 1 and 6, 2 and 3, 2 and 5, 2 and 6, 3 and 4, 4 and 5, 4 and 6 and 5 and 6 in table 4.15 above)

An interesting result is that which indicates significant difference between the subjects with negative attitude in the two experimental groups ($X_{\text{negatives}} = 11.88$ and $X = 8.05$)

4.5 Hypothesis Five (Ho5)

There will be no significant effect of the note-taking strategies and the personality differences on the students' achievement at the immediate recall test.

The interactive effect of note-taking strategies and the personality differences on the students' achievement at the

immediate recall test is the focus of this hypothesis. For this, the descriptive statistics illustrating the results and presented in table 4.16.

Table 4.16

Descriptive Statistics of the Students Achievement According to the Note-Taking Strategies and the Personality Groups at the Immediate Posttest

PERSON-ALITY GROUPS	STRATEGIES								
	NOTE-TAKING			NOTE FOLLOWING			CONTROL		
	N	\bar{X}	S.D	N	\bar{X}	S.D	N	\bar{X}	S.D
EXTRAVERT	16	10.53	4.52	16	9.94	4.12	16	8.38	3.61
INTROVERTS	16	9.73	3.67	16	12.75	5.3	16	11.15	4.06

Table 4.16 illustrates the achievement of the students in their different personality groups across the note-taking strategies. The introverts in experimental group II (note following) and control group scored higher than the extrovert in these same groups (12.75 to 9.94 and 11.13 to 8.38 respectively). However, the extrovert in the note-taking group, experimental group 1, had a higher mean than their introverted counterparts (10.53 to 9.73).

To find out if these observed differences are statistically significant, analysis of covariance was computed

to show the interaction of the two variables, strategy and personality differences.

Table 4.17

Analysis of Covariance of the Immediate Posttest Scores of the Different Personality Groups Under Their Note-Taking Strategies

Source of Variation	SS	DF	MS	F	P
Covariance (pretest)	563.703	1	563.703	74.852	.000
Main Effect Strategy	90.066	2	45.033	5.980	.004*
Personality	15.182	1	15.182	2.016	.159 ^{ns}
2 Way Interactions					
Strategy X Attitude	38.307	2	19.154	2.543	.084 ^{ns}
Explained	709.082	5	118.180	15.693	.000
Residual	670.251	90	7.531		
Total	1379.333	95	14.519		

** Significant at $P < .05$ level.

(ns) Not Significant at $P < .05$ level

The analysis of covariance table 4.17 reveals that the main effect of strategy is significant, but that of personality is not significant. The interactive effect of

strategy and personality has an F value of $F(2.90) = 2.543$ ($P < 0.05$) which is not significant.

The non-significant interactive effect of strategy and personality differences indicates that note-taking strategy and personality difference have no significant effect on the achievement of students on the immediate recall test. Hypothesis 5, which states that there will be no significant interactive effect of strategy and personality difference is therefore accepted.

To be able to apportion adequately the contribution of each of the interacting factors the Multiple Classification Analysis (MCA) was undertaken. The result is shown in table 4.18.

Table 4.18

Multiple Classification Analysis of the 3x2 Analysis of
Covariance of the Interaction of Strategy and Personality
at the Immediate Posttest

Grand Mean 10.417

Variable +Category	N	Unadjusted		Adjusted for Independent + Covariance	
		Deviation	Eta	Deviation	Beta
Note-taking Strategies					
1. Taking Notes	32	-.26		-.16	
2. Following notes	32	.93		1.27	
3. Listening notes (control)	32	-.67		-1.11	
			.18		.26
Personality					
Extravert	48	-.78		-.39	
Introverts	48	-.78		.41	
					.11
Multiple R ²					.486
Multiple R					.697

The Multiple Classification Analysis table 4.18 shows that strategy contributed 6.76% (.26²) of the differences in the students' achievement while personality differences contributed 1.21% (.11²) of the observed total variance. With the information from tables 4.16, 4.17 and 4.18, the hypothesis of non-significant interactive effect between note-taking strategies and attitudinal difference is accepted.

4.6 Hypothesis Six (Ho6)

There will be no statistically significant effect of the note-taking strategies and the personality differences on the students' achievement in the delayed recall test.

Table 4.19

Descriptive Statistics of the Students' Achievement According to the Note-Taking Strategies and the Personality Groups at the Delayed Posttest

PERSON- ALITY GROUPS	STRATEGIES								
	NOTE-TAKING			NOTE FOLLOWING			CONTROL		
	N	X	S.D	N	X	S.D	N	X	S.D
EXTRAVERT	16	16.29	4.25	16	9.81	3.7	16	8.31	3.21
INTROVERTS	16	12.33	4.62	16	10.25	3.23	16	11.00	3.40

From table 4.19 it was found that the extrovert in the note-taking group (experimental group 1) had a higher mean

score than the introverts under the same note-taking strategy. viz 13.29 to 12.33. However, in the note following and control groups, the introverts performed better than the extroverts: 10.25 to 9.81 and 11.00 to 8.31 respectively.

To further investigate the effect of strategy and personality differences, a two-way analysis of covariance was computed as shown in table 4.20.

Table 4.20

Two-way Analysis of Covariance of the Delayed Posttest Scores of the Different Personality Groups Under Their Note-taking Strategies

Source of Variation	SS	DF	MS	F	P
Covariance (pretest)	590.257	1	590.257	39.835	.000
Main Effect Strategy	231.079	2	115.540	7.797	.001*
Personality	.212	1	.212	.014	.905 ^{ns}
2 Way Interactions					
Strategy X Attitude	32.016	2	16.008	1.080	.344 ^{ns}
Explained	853.895	5	142.316	9.606	.000
Residual	1318.761	90	14.818		
Total	2172.656	95	22.870		

** Significant at $P < .05$ level.

(ns) Not Significant at $P < .05$ level

The 3 x 2 analysis of covariance in table 4.20 shows that there was no significant interactive effect of note-taking strategies and personality differences on the students achievement. With the F value of $F(2,90) = 1.080$ $P < 0.05$, it can be said that no statistically significant difference exists between the achievement of the extroverts and introverts under the different note-taking strategies. The Null hypothesis is therefore accepted.

UNIVERSITY OF IBADAN LIBRARY

Table 4.21

Multiple Classification Analysis of the Delayed Posttest Scores of the Different Personality Groups Under the Different Note-Taking Strategies

Variable +Category	N	Unadjusted		Adjusted for Independent + Covariance	
		Deviation	Eta	Deviation	Beta
Note-taking Strategies					
1. Taking Notes	32	2.00		2.09	
2. Following notes	32	-.81		-.45	
3. Listening notes (control)	32	-1.19		-1.64	
			.30		.33
Personality					
Extravert	48	-.31		.05	
Introverts	48	.33		-.05	
					.01
Multiple R ²					.378
Multiple R					.615

The Multiple Classification Analysis table (4.21) shows

the relative contribution of each factor to the observed variance. Note-taking king strategies as a factor has accounted 0.01% of the observed variance. This further confirms that there is no statistically significant interactive effect of note-taking strategies and personality differences on the subjects' scores in the delayed recall test. The non-significant interactive effect of these two independent variables implied that there was no significant differential effects of personality differences on all types of note-taking strategies. Extrovert and introverts who adopted the same type of note-taking strategy did not perform markedly different at the delayed recall test in Social Studies.

4.7 Hypothesis Seven (Ho7)

There will be no statistically significant effect of the note-taking strategies, attitudinal and personality differences on the students' achievement in the immediate recall test.

Table 4.22 depicts the information on the summary of the analysis of covariance of the main effects, the two and three way interactions of the factors involved in the study.

Table 4.22

Summary of the 3x2x2 Analysis of Covariance of the Immediate Posttest Scores of the Different Attitudinal and Personality Groups Under the Different Note-Taking Strategies

Source of Variation	SS	DF	MS	F	P
Covariate (pretest)	563.703	1	563.703	77.762	.000
Main Effect	108.158	4	27.039	3.730	.008*
Strategy	89.208	2	44.604	6.153	.003*
Attitude	1.087	1	1.087	.150	.700 ^{ns}
Personality	15.901	1	15.901	2.193	.142 ^{ns}
2 Way Interactions	67.828	5	13.566	1.871	.108 ^{ns}
Strategy X Attitude	11.051	2	5.525	.762	.470 ^{ns}
Strategy x Personality	32.769	2	16.384	2.260	.111 ^{ns}
3 Way Interaction Strategy x Attitude x Personality	37.968	2	18.984	2.619	0.079 ^{ns}
Explained	777.657	12	64.805	8.940	.000
Residual	601.676	83	7.249		
Total	1379.333	95	14.519		

* Significant at P < 0.05 level.

(ns) Not Significant at P < 0.05 level

Table 4.22 indicates the F-ratio for the main effects,

the two and the three way interactive effects of strategy, attitude and personality. With F. value of $F(2,83) = 6.153$ $P < 0.05$) effects of strategy have been found to be significant. However, attitude and personality as main effects have not been significant $F(2,83) = 1.50$ $P < 0.05$) and $F(2,83) = 2.193$ $P < 0.05$) respectively).

Similarly, the two way interactions have also been found to be non-significant. The three way interaction only approaches significance, with an F ratio of $F(2,83) = 2.619$ $P < 0.07$).

With these results, the Null hypothesis of non-significant interactive effects of strategy, attitude and personality is hereby accepted at the immediate recall test.

To further examine the source of the differences, additional information was sought from the Multiple Classification Analysis, table 4.23.

Table 4.23

Multiple Classification Analysis of the 3x2x2 Analysis of Covariance on the Immediate Posttest Scores of the Students

Grand Mean 10.417

Variable +Category	N	Unadjusted		Adjusted for independent + Covariance	
		Deviation	Eta	Deviation	Beta
Note-taking Strategies					
1. Taking Notes	32	-.26		-.16	
2. Following notes	32	.93		1.26	
3. Listening notes (control)	32	-.67		-.11	
			.18		.26
Attitude:					
1. Positive	48	-.73		-.11	
2. Negative	48	.73	.19		.03
Personality					
1. Extravert	48	-.78		-.41	
2. Introverts	48	-.82		.42	
					.11
Multiple R ²					.487
Multiple R					.698

From the Multiple Classification Analysis (MGA) table 4.23, it was found that the difference in note-taking strategies contributed 6.76% ($.26^2$) of the observed variance while attitudinal differences accounted for .09% ($.03^2$) and personality differences contributed 1.21% ($.11^2$) of the variance. In essence note-taking strategies accounted for the greatest proportion of the variations observed.

4.8 Hypothesis Eight (Ho8)

This hypothesis states that there will be no statistically significant interactive effect of note-taking strategy, attitudinal and personality differences on the students' achievement in the delayed recall test.

Information relating to this hypothesis is shown on table 4.24 below:

able 4.24

Summary of the 3x2x2 Analysis of Covariance on the Delayed Posttest Scores of the Different Attitudinal and Personality Groups Under Their Note-Taking Strategies

Source of Variation	SS	DF	MS	F	P
Covariate (pretest)	590.257	1	590.257	51.808	.000
Main Effect	449.407	4	112.352	9.861	.000*
Strategy	258.307	2	119.154	10.458	.000*
Attitude	217.785	1	217.785	19.115	.000*
Personality	4.343	1	4.343	.381	.539 ^{ns}
2 Way Interactions	175.574	5	35.115	3.082	.013*
Strategy X Attitude	101.571	2	53.185	4.721	.011*
Strategy x Personality	28.863	2	28.863	2.533	.115 ^{ns}
3 Way Interaction					
Strategy x Attitude x Personality	11.791	2	5.896	.517	.598 ^{ns}
Explained	1222.029	12	102.252	8.975	.000
Residual	945.627	83	11.393		
Total	2172.696	95	22.870		

* Significant at P < 0.05 level.

Table 4.24 reveals a significant F-ratio of $F(2,83) = 10.458$ ($P < 0.05$) for strategy as a main effect and $F(2,83) =$

19.115 $P < 0.05$) for attitude, An F-value $F(2, 83) = .381$ $P < 0.05$) for personality is not significant. The two way interactions between strategy and attitude had significant effect on the students' performance while the interactive effect of strategy and personality is non-significant. Similarly the 3 way interaction among the three factors, strategy, attitude and personality is non-significant. ($F(2, 83) = .517$ $P < 0.05$).

The Multiple Classification Analysis on table 4.25 further depicts the interactive effects of strategy, attitudinal and personality difference at the delayed recall test.

Table 4.25

Multiple Classification Analysis of the 3x2x2 Analysis of Covariance of the Subjects Achievement in the Delayed Posttest

Variable +Category	N	Unadjusted		Adjusted for Independent + Covariance	
		Deviation	Eta	Deviation	Beta
Note-taking Strategies					
1. Taking Notes	32	2.00		2.10	
2. Following notes	32	-.81		-.38	
3. Listening notes (control)	32	-1.91		-1.71	
			.30		.33
Attitude:					
1. Positive	48	.76		1.57	
2. Negative	48	-.76	.16	-1.57	.33
Personality					
1. Extravert	48	-.31		.21	
2. Introverts	48	.33		-.22	
			.07		.05
Multiple R ²					.05
Multiple R					.479
Multiple R					.692

Table 4.25 shows the Multiple Classification Analysis of the subjects' scores at the delayed recall test. From the table it is observed that strategy, attitudinal and personality differences accounted for 10.89% ($.33^2$), 10.89% ($.33^2$) and .25% ($.05^2$) of the variances observed in the scores.

Based on the information on tables 4.24 and 4.25 the Null Hypothesis of no significant difference is hereby accepted. A 3- way interaction among strategy, attitudinal and personality differences did not produce any significant effect.

4.9 Summary of the Result

From the analysis presented in table 4.1 to 4.25 the following conclusions were be reached:

- (1) There were statistically significant differences between the scores of the subjects who adopted different note-taking strategies on the immediate and delayed test, thus Hypothesis one (H_{01}) and hypothesis two (H_{02}) were both rejected.
- (2) There were no statistically significant differences in the interacting effect of the note-taking

strategy and attitudinal differences during the immediate recall test. But in the delayed recall test, significant differences existed in the interactive effect of note-taking strategies and attitudinal differences of the three groups. Thus while hypothesis three (Ho3) was accepted, hypothesis four (Ho4) was rejected.

- (3) The interactive effect of note-taking strategy and personality differences produced no statistically significant results at both the immediate and the delayed recall test. Thus hypotheses five (Ho5) and six (Ho6) were accepted.
- (4) The interaction of note-taking strategy, attitudinal and personality differences did not produce statistically significant difference between the groups at both the immediate and delayed recall test. With these results hypotheses seven (Ho7) and eight (Ho8) were accepted.

CHAPTER FIVE**DISCUSSION OF RESULTS, IMPLICATIONS
AND SUGGESTIONS****5.0 Introduction**

In this chapter, the findings which have emerged from the study are discussed. Insights that were provided about the comparative effectiveness of the three note-taking strategies, as applied to the attitude, personality and the achievement of students in Social Studies. Other information which was found to be novel was also highlighted. The chapter concludes with the implications of the findings and the suggestions which were offered for further research work in the area under study.

**5.1 Effects of Note-Taking Strategies on Students'
Achievement in the Immediate Recall Test**

The question addressed by the first hypothesis of this study was whether the concurrent note-taking group, the note following group (experimental groups 1 and 2) and the control group would differ significantly in their achievement at the immediate recall test. The result obtained yielded a statistically significant difference ($F(2,93) = 5.840 P < 0.5$).

The students who followed note performed better than those who took note and the least were those in the control group. They had a mean score of 11.34, 10.15 and 9.75 respectively.

With these results the two experimental groups performed substantially better than the control group. Thus note-taking strategies produced improved achievement than non-note-taking strategy. But within the two experimental groups, significant differences were still obtained in favour of the note following group (experimental group 2).

These findings appear to be supportive of that of Peper and Mayer (1978) who reported significant differences between the performance of note-takers and non-note-takers. In their study, the subjects who took notes during lecture had significantly higher mean scores than those who just listened to lecture.

In another dimension, the present results are consistent with an earlier study by Todd and Kesler (1971) who found that those who followed or underlined teacher's prepared notes had higher mean scores than those who took notes concurrently with lecture. Their study also found that the two note-taking groups had higher mean scores than the control group.

That the note followers in these experiments performed better than the concurrent note-takers and the control group is consistent with the distraction hypothesis (Fraser, 1970; and Peper and Mayer, 1978) which states that note-taking during lecture forces the learner to concentrate on the motor act of writing instead of more fully listening to the lecture. Thus note-taking tentatively prevented the concurrent note-takers from paying adequate attention to the lecture material or information as much as the note followers did (Peter, 1972).

However, the fact that both the note takers and the note followers had higher mean scores than the control group evidently confirms the facilitative effect of note-taking in whatever form it takes and as widely reported in the literature (Divesta and Gray, 1972; Fisher and Harris, 1973; Aiken, Thomas and Shennum, 1975; Mayer, 1984; Uwakwe, 1984; and Peper and Mayer, 1986).

5.2 Effect of Note-taking Strategies on Students Achievement in the Delayed Recall Test

The results of the performance of students in the note-taking, note following and control groups at the delayed

recall test, displayed in tables 4.5 to 4.8 indicate that there are significant differences among the performances of the different groups. In the same way at the immediate recall test, the two experimental groups performed better than the control group. The one-way analysis of covariance with an F-value of $(F, (1,93) = 7.879 P < .05)$ is quite indicative of the significant difference in the performance of the different groups.

It is however interesting to find that the concurrent note-takers who performed worse than the note followers in the immediate posttest performed better at the delayed test than the note followers and more distinctly better than the control group ($X_1 = 13.844$, $X_2 = 10.031$ and $X_3 = 9.65$). Unlike the suggestions of investigators such as Peters (1972) Fisher and Harris (1974) Carter and Van Matre (1975) and Aiken, Thomas and Shennum (1975) that note taking interferes with learning, the present results have shown that rather than interfering, concurrent note-taking enhanced the recall of lecture information at the delayed recall test than note following.

In the present study, the note-taking activities during lecture have been found to serve as a generative device that

encouraged the building of connections between what was presented and what was already known by the learners. In line with the expectations of the generative hypothesis (Frase, 1970) there had been additional cognitive processes undertaken during note-taking. For example, a pattern of treatment-posttest interaction was set in which note takers performed better than the note followers at the delayed post-test. This occurred because note takers were able to build a more integrated and broader learning outcome that facilitated reminiscence which was required in the delayed recall test (Wittrock, 1975 and Mayer 1976 and 1984). It was this which assisted the note takers to have a significantly higher mean score than the note followers and the control group during the delayed posttest.

If the study have been considered only at the immediate posttest, as some studies have done; one would have concluded that the note follower performed better than the note takers. However, because attempts were made to assess the learning outcomes at both the immediate and delayed post-tests, significant differences emerged in favour of the note takers at the delayed test. This, therefore, confirms the greater

facilitative effect of concurrent note-taking over note following or listening only (control group) in the delayed recall of lecture information.

Perhaps, the probability of this result occurring could be further ascribed to the deeper information processing which note takers had in dealing with concepts while taking notes. It increased the probability that the concepts would be better retrieved even though no opportunity to review written notes was offered. The present study offered no opportunity for review of notes, yet the note takers still had higher mean scores than the note followers and the control during the delayed posttest. The results therefore corroborate (Kiewra, 1985; Kiewra et al (1991, 1993) notion that the complete effect of whatever is learned during note-taking comes to fruition only after a period of contemplation, that is the period during which the 'learning has set or gel'.

In Social Studies, students need the information gleaned from lecture not only for providing immediate or prompt answers but also for the solution of problems that develop from the various facets of human undertaking. Thus, apart from the usefulness of note-taking in performing the external

storage function (Divesta and Gray, 1992), they also induce better remembering at later time.

Of particular interest is the credence learnt to Howe's (1970) assertion that the probability of recalling items that occurred in the subjects' note was higher than that of recalling items in other peoples note. Note followers, who had the full complement of information as they were put in the lecturer's prepared notes did not recall as much as the note takers who produced their own notes. This became more obvious during the delayed posttest.

In summary the results of the study as related to the main effect of note-taking strategies, proved most consistent with the theories of note-taking as postulated by Frase (1970) and expanded by Peper and Mayer (1978). Despite the fact that two novel conditions of (a) concurrent note-taking and note following for series of lectures; rather than the common single lecture situation, was adopted in the present study (b) dependent measures that included both immediate and delayed recall with no opportunity for review, were introduced in the experiment, yet the results are corroborative of some of the previous note-taking studies like those of (Todd and Kesler,

1971; Peters, 1972; Fisher and Harris, 1973 and Mayer, 1984. Peper and Mayer, 1986 and Kiewra et al 1991).

5.3 Effect of Note-taking Strategy and Attitudinal Difference on Students Achievement in the Immediate Recall Test

It was hypothesized that students with positive or negative attitude to Social Studies under the three note-taking strategies will not differ significantly in their achievement at the immediate recall test, that is, those subjects with positive or negative attitude who adopted the same note-taking strategies would be identical in their achievement in Social Studies at the Immediate Posttest. The results presented in tables 4.9, 4.10 and 4.11 provided some details of these results.

The subjects with positive attitude under each of the note-taking strategies, had relatively higher mean score than those with negative attitude under the same strategy (viz Exp 1 $X = 11.44$ to 8.88 ; Exp 2 $X = 11.75$ to 10.94 and control group 10.25 to 9.25). However, the two way-analysis of covariance (table 4.10) indicated that there was no statistically significant difference between the achievement of subjects with positive attitude and those with negative

attitude under the different note-taking strategies ($F(1,90) = .919$ $P < 0.05$).

The result of the present study runs counter to those of some other previous studies (Bakare, 1969, Baurect-Fuch, 1975, Gardiner, 1985 and Igwe, 1979) who individually stressed that the performance on a task is largely dependent on the type of attitude which an individual exhibits to the task.

In the present study the interaction between the note-taking strategies and positive attitude failed to produce any significant difference. Thus it was observed that whether a subject's attitude was positive or negative his performance was also dependent on the type of note-taking strategy he or she adopted.

One needs to proffer some reasons for the non-significant difference in the achievement observed in the analysis of covariance at this immediate posttest. (Table 4.10). The fact that the immediate recall test came quite close to the lecture may serve to explain why the effect of the difference in attitudinal disposition was not great enough to strengthen the effect of the facilitative note-taking strategy. Rather, the effect of recency which Akinboye (1981) stated as one of

important factors which favour remembering enabled both subjects with positive and those with negative attitude who employed similar or different note-taking strategies to have similar performances.

Another essentially tentative post hoc rationalisation of the present result which is only slightly supported by data is that the non-significant difference might be linked to the idea that the relationship between attitude and nature of task on one side and achievement on the other is a consequence of reciprocal influence. Attitude and nature of task influence or effect achievement and achievement in turn affects attitude (Neele's, 1969). The students were made to respond to multiple choice objective items in which achievement could easily be influenced by guessing. Thus students with positive and negative attitude to the Social Studies responded much in similar way. Furthermore those students who adopted any of the two experimental strategies were able to glean enough information from the lecture and so they were able to respond correctly to the test items, the difference in their attitudinal disposition notwithstanding.

The above suggestion seems to fall in line with Zimbardo

and Ebbesen's (1969) opinion that all techniques which are known to increase learning should be applicable to producing change in attitude. Those subjects with negative attitude who adopted facilitative note-taking strategies might have tentatively changed their attitude to the subject-matter and thus responded to the recall test items in a way that earned them similar achievements to those who had positive attitude. Also, as Webb (1972) opined, attitude and intellectual ability are not conterminous with academic performance. Even subjects with negative attitude to Social Studies may be highly intellectually sound enough to be able to respond very well to the presented task at the immediate recall time.

5.4 Effect of Note-taking Strategy And Attitudinal Difference on Achievement at the Delayed Recall Test

The result of this study did not support the Null Hypothesis that there will be no interactive effect of note-taking strategy and attitudinal differences on students achievement at the delayed recall test. With an F-value of $(F(2,90) = 4.465 \quad P < 0.05)$, a statistically significant interactive effect was established (ref. table 4.12). Students with positive attitude under the same or different

note-taking strategies had higher mean scores than those with negative attitude under the same or different note-taking strategies except in the control group.

These results establish that positive attitude is complementary to facilitative note-taking strategy at the delayed recall test. These results corroborate previous findings of Schibeci (1984) and Igwe (1991) who obtained positive correlation between attitude to a task and achievement in the particular task. Subjects with positive attitude paid greater attention to the presented materials and took down the essential or important aspects of the lecture or underlined and noted the salient points in the lecturer's prepared notes.

Peper and Mayer (1978) and Peter (1972) also found similar interactive effects in their note-taking experiments. In both studies, students with high ability who adopted concurrent note-taking strategy performed significantly better than those with medium and low ability who adopted the same or different note-taking strategy. Though the variable that interacted with note-taking strategy is different, the interactive effect of the variables still makes them similar

to the present result.

The Multiple Comparison of mean scores in table 4.15 of this study further exemplifies the fact that the relative effectiveness of note-taking strategy, complemented by the positive attitude of the subjects produced the significant effects. Subjects with positive attitude under experimental groups 1 and 2 had significantly higher mean scores than those with negative attitude in the same or different strategy groups (see table 4.15).

It can therefore be concluded that the interaction between note-taking strategy and positive attitude induced greater reminiscence after learning while negative attitude interacting with note-taking strategy produced greater forgetfulness in the remembering of cognitive information in Social Studies. In relation with the immediate recall, the time-lag between lecture and recall test made the differences in the two results.

5.5 Effect of Note-taking Strategy and Personality Differences on Students' Achievement

Hypotheses five and six of the study deal with the interactive effects of note-taking and personality differences

at the immediate and delayed recall test respectively. The two hypotheses seek to establish whether an extrovertic subject who adopted the same or different note-taking strategy with an introvertic subject would differ significantly in achievement, first at the immediate recall test and secondly, at the delayed recall of Social Studies lecture information. For both hypotheses, no significant differences were obtained in the subjects' achievement to warrant a rejection of either. The 2 way analysis of covariance for the immediate recall test yielded an F-value of $(F(2,90) = 2.543 P > 0.05)$ while for the delayed posttest it was $F(2,90) = .014 P > 0.05$.

The result of the present experiment, runs counter to the findings of some earlier studies (Walker, 1968; Howath, 1968; Entwistle and Welsh, 1969; Leith, 1969, 1993 and Boyinbode, 1989). All these studies found that the extraverts with low arousal and weak consolidation recall better later on when consolidation had ceased. Unlike the situation in these previous studies, the extroverts and the introverts under different or the same note-taking strategies did not exhibit any significantly different performance in both the immediate and delayed recall test.

The non-significant F-values of the analysis of covariance obtained in the present study, however, corroborates the findings of Warburton (1968^b) and Eysenck and Cookson (1969). The two studies found little or no evidence to suggest a significant difference in the academic achievement of extroverts and introverts at the tertiary level of education. However, they suggested that extroverts tend to be better at school work in the primary and early secondary school, but later this observed difference changes and later the introverts take over or at worst level up with the extroverts.

Similarly, Savage (1962) in Australia and Levin (1967) in America reached the same conclusions that there is usually little evidence to suggest significant difference between extroverts and introverts at the tertiary level of education.

The fact that most of the subjects in the present study are in their later adolescence or early adulthood also corroborates the suggestions made by the previous researchers. The slightly superior achievement of the introverts in the note following (Exp 2) and control groups in both the immediate and delayed posttest was not significant enough to

contradict the findings of earlier studies.

The results of the present study also show some similarities with those of Wisdom (1971) who, in this study of the relationship between personality differences and students academic performances in different disciplines, came to the conclusion that in the Social Sciences, the correlation between the extroversion - introversion dimension was negligible. The present study lends credence to that finding as Social Studies, which is the subject-matter of this study belongs to the social Sciences.

In the absence of readily available reports of previous studies involving the interaction of personality dispositions and note-taking strategies, we may have to indulge in some speculations here to explain some of the observable inconsistencies. As pointed out in chapter two, the two personality dispositions manifest themselves in different ways, especially during class activities. While the extrovert is enthusiastic and reacts readily to the subject-matter, to the lecturer, to fellow-students and even to instructional materials, the introverts is slow to show such reactions. Similarly, while the extrovert has a greater tolerance for

ambiguity and lack of structure in teaching situation, the introvert is more inclined to be responsive to unambiguous and clearly structured situation. In this study, the measures of achievement come after the lecture, one immediately after and the other long after. None of the two recall tests was within the lecture time. Thus, the initial enthusiasm of the extravert might have waned before the actual taking of the recall test. Hence, his performance was found not to be different from that of the introvert. Secondly, the subject-matter of this particular study, like many other courses in Social Studies, was neither structured nor was the presentation of the content ambiguous. In essence the context of the study was such that gave no particular advantage to either the extrovert or the introvert under whichever group they studied.

One can therefore conclude that the non-significant difference observed in the interactive effect of note-taking strategies and personality differences in this study, may be due, in part, to the age and level of education of the subjects, the content and context of the experiment, and the time when the measures of achievement were taken. All these

factors mediated in producing a non-significant difference in the achievement of the extrovert and introverts who employed the same or different note-taking strategies.

5.6 The Interactive Effect of Note-Taking Strategies, Attitudinal and Personality Differences on Students' Achievement

It was hypothesized that the interactive effect of note-taking strategy, attitudinal and personality differences would produce no significant difference in the subjects' achievement. Hypothesis seven focused on the immediate recall while hypothesis eight was directed to the delayed recall. For each of the two hypotheses, 3 way analysis of covariance was computed (table 4.22 and 4.24 respectively).

At the immediate recall level, the analysis of covariance produced an F value of $(F(2,83) = 2.619 P < 0.05)$ while at the delayed recall the F-ratio was $(F(2,83) = .517 P < 0.05)$. Thus, the two Null Hypotheses were similarly accepted. No statistically significant differential interactive effect of note-taking, attitude and personality differences was obtained. However, some interesting observations are notable.

First is the demonstrated superiority of the note-taking

strategy as a mediating factor. In both immediate and delayed recall, note-taking strategy as a main effect brought about significant differences. While attitude as main effect was significant at the delayed recall, it was not at the immediate. Similarly, personality differences did not effect significant differences at the two levels of recall. From these results, one could infer that the combination of note-taking strategy and positive attitude to Social Studies would facilitate greater effective learning of Social Studies. However, the personality dimension of extroversion - introversion did not sufficiently mediate in bringing about differences in students achievement. That is whether a student was introvertic or extrovertic, his level of achievement in Social Studies depends on the type of note-taking strategy and the form of attitude he/she demonstrates towards Social Studies.

5.7 Implication of the Findings for Teacher Education System

The need arises from the findings of this study to highlight some of the implications which the findings have for the teacher education system in general and for the Nigerian Certificate in

Education Programme in particular,

First and foremost, this research work provides a useful link between theory and practice. The theoretical propositions behind note-taking as a mathemagenic activity during lecture have been tested to show how effective they are. The attention, distraction and generative theories of note-taking have been amply corroborated by the results of this study. The implication of this, therefore, lies in the fact that teacher education programmes, as Johnson and Johnson (1979) suggested, should include, as a matter of policy, the teaching and practising of skills necessary in making ones own notes during lectures. Students should be trained to put down the important lecture information on their own without unnecessarily waiting for lecturers to give them 'handouts' or dictate notes for them to write. The actual activities of note-taking enable the note takers acquire broader learning outcomes that integrate new materials with the old ones - Peper and Mayer (1978).

Though students express a marked desire for prepared notes (handouts) and say that handouts help them grasp the structure of the lecture more easily (Hartley, 1970), it has

been found quite convincingly that taking down lecture information individually and concurrently with lectures leads to better learning, especially in the more verbal contents like Social Studies. The training of students to take accurate notes is a task for the trainers of teachers at the various teachers colleges, be it at the Teachers' Grade Two Certificate Level, the Nigerian Certificate in Education Level, the Polytechnics or the Universities.

Two, another major finding which emerges from this study is that taking a written transcription of lecture information concurrently with lecture proves facilitative to learning, especially in a largely verbal subject such as Social Studies. It has been abundantly demonstrated that lecture information, encoded during lecture through a note-taking strategy is better remembered and recalled than when no such written transcription was undertaken. Students should therefore be given opportunities to take down lecture information. This can be accomplished if lectures are delivered at a relatively moderate speed which can allow students hear, comprehend, note or jot down and digest information for later remembering.

Thirdly, teaching with a view to improving students

abilities to transcribe information so that it can be remembered at a later time also has implications for the new educational dispensation - the 6-3-3-4 system. At all levels of education in Nigeria students are tested at the immediate post lecture level (formative evaluation) and also at the delayed post lecture level (Summative evaluation). Students can be stimulated to paraphrase, organise and integrate newly presented information by making note thereby engaging in what Wittrock (1974) referred to as generative learning. This type of learning brings about effective recall after learning so that at the terminal point of each segment of the 6-3-3-4 system, students can recall as much as demanded from what was learnt and so pass creditably.

Furthermore, for our educational system, the present study is a useful indication of how, as Bakare (1969) puts it, the attitude which the learner demonstrates to a course or programme of learning, serves as his/her limiting factor of success in the course or programme. With the ever-escalating number of intakes into our educational institutions, it becomes pertinent to find out our students' attitudes to particular course or set of courses before making them

specialise in the course. Essentially, efforts should be made to train our students to develop the correct attitude, not only to a subject but also to school work and education in general. Evaluation instruments should be developed, validated and standardized and made available to teacher trainers and their trainees, so that they can assess learners' attitudes. Only those with positive attitude should be made to specialise in particular subjects in which they have positive attitudes.

Another serious point of note deducible from this study and other note-taking studies before it, is the fact that the lecture method, though badly criticized, still remains the most economical and most commonly used in our teachers colleges. With the astronomical rise in the number of students that are admitted annually into our colleges, especially the Colleges of Education, it becomes imperative that lecturers in these colleges should learn to improve on their delivery of lectures. Lecture information should be disseminated at a rate at which effective learning would take place through students mathemagenic activities.

This study also has implications for students in the

primary and secondary stages of education. The students need instructions on how to process lecture information. These young learners should be helped to develop note-taking skills early in their academic careers. As they progress through school, they would be able to employ this strategy as their classes increasingly require more effective note-taking skills. Thus, by the time they reach college level, where note-taking demands are especially high, students would have internalized the monitoring process of note-taking and so have more control over their learning tasks.

5.8 Suggestions for Further Research

This research work does not pretend to have exhausted all areas of knowledge in the field of this particular investigation. It has only tried to extend the frontiers of knowledge in the area of study. Other areas and aspects of the study can be explored to advantage. The following are therefore suggested as areas needing further research endeavours.

- (1) The present study could be replicated with modification and at a lower or higher educational level. The modification can take the form of

giving students opportunity to review before taking any of the two posttest.

- (2) The students could be divided into ability groups along with their personality and attitudinal groups before they are randomly selected into note-taking strategy groups.
- (3) In the present study, students were not offered opportunity to decide which note-taking strategy to adopt. An area of possible research is to allow students to choose which note-taking strategy to use.
- (4) Another possible area of study is to compare the relative effectiveness of other mathemagenic activities like answering adjunct questions, setting instructional objectives e.t.c with that of note-taking. This will enable the researcher determine which of them produces the best learning opportunity.
- (5) Finally, there is yet no conclusion among researchers on whether the encoding functions or the external storage functions of note-taking is

superior. A study may be devised where a group of subjects would encode without review, another would encode and later review their notes while a third group would only review notes taken by their classmates. (This group would not attend the lecture). A comparison of the test performances of these groups would indicate which of the functions of note-taking is more facilitative to learning from a school subject.

5.9 Limitations of the Study

Generalizability is one of the cardinal objectives of research, however, this is often limited by some factors. The same applies to the present study.

It should be noted that only a particular school subject, Social Studies, and a one-unit course, population studies, were used in the present experiment. Some caution is therefore necessary in generalizing the results to other varieties of school subjects or courses. However the procedure of the treatment application in this study is similar to others used in other investigations where large classes were taught or more school subjects formed the

contents of learning, so the results of this study should not be viewed as peculiar to the subject used.

Another limitation of this research is that only retention and recall of factual information was measured at two levels (immediate and delayed). Note-taking activities may have more facilitative effects not only on retention of facts but also on transfer of knowledge.

This experiment was carried out at a specific level of teacher education and as such much of its results could not be generalized to other lower levels where students have not been matured enough to take down long notes.

The present study used the multiple choice objective test format for its measurement of subjects' retention and recall of lecture information; a rather more applicable and more efficient test of retention would have been verbatim reproduction or application of knowledge test. The type of test used can also be taken as another limitation of the study. All these notwithstanding, the study has its own significance.

REFERENCES

- ABODUNRIN Rogba: (1994). Test and Measurement in Education: Oyo Oloye Publishers, Kosobo, Oyo Nigeria.
- ADAMS, J. A. (1967). Human Memory. New York: McGraw Hill. Book.
- ADALUMO, P. A. (1986). A survey of secondary school students attitudes and academic performance in Social Studies in Akure Local Government Area of Ondo State. Unpublished M.Ed. Project, University of Ibadan.
- ADARALEGBE, A. (1980). The Nigerian Social Studies Programme: Retrospect and Prospect in Social Studies Teaching Issues and Problems/ NERC Publication, Benin City: Ethiope Publishers Nigeria Limited.
- ADARALEGBE, A. (1982). Teaching Education in an Emergent Nigeria in Nigeria Educational Forum 5(1), 57-71.
- ADEYEMI, M. B. (1986). Nigerian Social Studies. The Social Studies, 77(5) Sept-Oct. 1986.
- ADEYOYIN, F. A. (1990). Wanted: A Theory and Practices of Social Studies in University of Lagos Series in Education, 3: Theory and Practice of Education. F. A. Adeyoyin et al. Lagos: Joja Press Ltd. Ikeja.
- AHIERAKWEN, B.A.Y. (1981). Some Correlates of Secondary School Students Achievement in Physics in Imo State of Nigeria. Unpublished M.Ed. Research Project. University of Ibadan, Ibadan.
- AIKEN, E.C.: THOMAS. G.S. AND SHENNUN W. A [1975] Memory for a Lecture: Effects of Notes, Lecture Rates and Information Density. Journal of Educational Psychology, 67, 439-444.

- AIYELAGBE, J.A. (1989). A Comparative Study of Students' Attitude to Yoruba Language in Colleges of Education of Oyo State. M.Ed. Project, University of Ibadan, Ibadan.
- AKINBOYE, J.O. et al (1981). Psychological Foundation of Education Associateship in Education Series, University of Ibadan, Inst. of Education, Heineman Educ. Books Ltd.
- ALLPORT, G.W. (1963). Patterns and Growth in Personality. London: Holt Rinehart and Winston.
- ANDERSON, R.S. and FAUSAT, G.W. (1967). The Effects of Strong Formal Prompts in Programmed Instruction. American Journal of Educational Research, 4, 345-352.
- AUSUBEL, D.P. (1963) Cognitive Structure and the Facilitation of Meaningful Verbal Learning. Journal of Teachers Education 14, 217-221.
- AUSUBEL, D.P. (1970). The Use of Advance Organiser in the Learning and Retention of Meaningful Verbal Learning. Journal of Educational Psychology, 51, 267-272.
- AUSUBEL, D.P. (1970). Educational Psychology: A Cognitive View. New York, Holt Rinehart and Winston.
- BAKARE, C.G.M. (1969). Phenomenal Self Concept, Anxiety and Academic Performance. Unpublished. Ph.D. Dissertation, Columbia University.
- BALOGUN, T.A. (1974). A Study of Mathemagenics: An Investigation of a Topography of Learning Control in a Science Subject. M.Ed. Thesis, University of Barmingham, United Kingdom.
- BALOGUN, T.A. (1983). Effect of Adjunct Questions on Learning from programmed Text on some Ecological Concepts. Monograph, Department of Teacher Education, University of Ibadan.
- BALYEJUSA (1981). 'The Nature and Scope of Social Studies' in

NERC. The Concept and Scope of Social Studies Education for Schools and Colleges, Ibadan, Onibonjo Publishers Nigeria Ltd.

- BARNETT, DIVESTA & ROGOZINSKI (1980). What is Learned in Note-taking: Journal of Educational Psychology, 73(2), 181-192.
- BARR, R. BARTH, J.L. & SHERMIS, S.S. (1978). The Nature of Social Studies California. E.T.C. Publication.
- BARR, R.D. (1970). The Question of Our Professional Identity The Social Studies, 34, 752.
- BAURETI-FUCHS, K.M. (1975). Attitudinal Situational and Mental Health Correlates of Academic Achievement at the Undergraduate University Level. British Journal of Educational Psychology, 45, 227-231.
- BENDING, A.W. (1960). Extraversion, neuroticism and Students' Achievement in Introductory Psychology. Journal of Educational Research 53, 263-267.
- BENTON, S.L., KIEWRA, K.A., WHITFILLS, J.M. & DENNISON, R. (1993). Encoding and External Storage Effects on Writing Processes. Journal of Educational Psychology, 85(2), 267-280
- BOLIVAR, A. (ed.) (1973). The New Encyclopedia Britannica, 2, 1973-74.
- BORG, W.R. & GALL, M.D. (1979). Educational Research An Introduction. New York, Longmans.
- BOYINBODE, (1989). Personality Correlates of Item Response Changing Behaviour in Two Objective Test Formats. Unpublished Ph.D. Thesis, University of Ibadan.
- BRUNTING, R.H. (1968). Effect of Review and Test like Events Within the Learning of Prose Material. Journal of Educational Psychology, 59, 16-19.

- CAMPBELL, D.T. & STANKEY, J.C. (1963). Experimental and Quasi-Experimental Designs for Research. Chicago Rand McNally Publishers.
- CARROLLS, J.B. (1968). On Learning from Being Told. Educational Psychologist. 5(2) 1, 5-10.
- CARTER, J.F. and VAN MATRE (1975). Note-taking versus Note-taking. Journal of Educational Psychology. 67, 900-904.
- COOK, L.K. & MAYER R.E. (1983). Reading Strategies Training for Meaningful Learning from Prose in M. Pressley and J.R. Leven (eds). Cognitive Strategy Research: Educational Application, New York. Springer-Verlag, 87-131.
- COWEL, M.D. & ENTWISTLE, N.J. (1971). Personality Study, Attitudes and Academic Performance in a Technical College. Britain Journal of Educational Psychology. 41, 85-89.
- CRAIK, F.I.M. & LOCKHART, R.S. (1972). Levels of Processing: A Framework for Memory Research Journal of Verbal Learning and Verbal Behaviour. 11, 671-684.
- CRAIK, F.I.M. & TULVING, E. (1975). Department of Processing and the Retention of Words in Episodic Memory. Journal of Experimental Psychology: General 104, 268-294.
- CRAWFORD, C.C. (1925). The Correlation Between Lecture Notes and Quiz paper. Journal of Educational Research. 12, 282-291.
- DAVIDOFF, L. LINDA (1980). Introduction to Psychology. 2nd Edition. McGraw-Hill Inc.
- DIVESTA, F.J. & GRAY, G.S. (1972). Listening and Note-Taking. Journal of Educational Psychology 63(1), 8-14.
- DU-BEY, D.L. (1980). Problems and Issues in Teaching Methods of Social Studies Teaching Issues and

Problems. NERC Publication. Benin City. Ethiope Publishers Nig. Limited.

- DUROJAIYE, M.O.A. (1974). The Role of Non-Cognitive Factors in School Learning of Ugandan Secondary School Pupils. West African Journal of Educational and Vocational Measurement 2(1)
- EGBUGARA, U.O.(1980). Effects of Orienting Stimuli on the Attitudes and Achievement in Biology of a Group of Nigerian Secondary School Pupils. Unpublished Ph.D. Thesis, University of Ibadan.
- EICH, (1982). A Composite Holographic Associative Recall Mode. Psychological Review. 89(6) 627-661.
- EINSTEIN, G.O., HARRIS, J. & SMITH, S. (1985). Note-Taking Individual Differences and Memory for Lecture Information. Journal of Educational Psychology. 77(5), 522-532.
- ELLIOT, C.D. (1972). Personality Factors and Scholastic Attainment. British Journal of Educational Psychology. 42(1), 23-32.
- ENTWISTLE, N.J. & CUNINGHAM, S. (1968). Neuroticism and School Attainment - a Linear Relationship British Journal of Educational Psychology. 38, 123-133.
- ENTWISTLE, N.J. & WELSH, J. (1969). Correlates of School Attainment at Different Ability Levels. British Journal of Educational Psychology. 39, 57-63.
- ENTWISTLE, N.J. (1972). Personality and Academic Attainment. British Journal of Educational Psychology. 42, 137-151.
- EYSENCK, S.B. & EYSENCK, H.J. (1963). On the Dual nature of Extraversion. British Journal of Social and Clinical Psychology. No.2, 46-55.
- EYSENCK, H.J. & EYSENCK, S.B.C. (1968). Manual-Eysenck

Personality Inventory. Educational and Industrial Testing Service. San Diego, California, 88.

- EYSENCK, H.J. (1972). Personality and Learning in W.D. Walls and V.P. Varma: Advance in Educational Psychology I: University of London Press Ltd. 97-105.
- EYSENCK, H.J. & COOKSON, D. (1969). Personality in Primary School Children Ability and Achievement. British Journal of Educational Psychology. 39, 109-122
- FAFUNWA, A.B. (1972). The Purpose of Teacher Education in A Philosophy for Nigerian Education. Proceedings of the Nigerian National Curriculum Conference. Ibadan. Heinemans. 80-97.
- FAFUNWA, A.B. (1974). History of Education in Nigeria. London, George Allen and Unwin Limited.
- FAW, H.W. & WALLER, T.G. (1976). Mathemagenic Behaviour and Efficiency in Learning From Prose. Review of Educational Research. 46, 691-720.
- FEDERAL REPUBLIC OF NIGERIA (1981). National Policy on Education (Revised), Lagos Federal Ministry of Education, Government Press.
- FISHER, J.L. & HARRIS, M.B. (1973). Effects of Note-Taking and Review on Recall Journal of Educational Psychology 65, 321-323
- FISHER, S.L. & HARRIS, M.B. (1974). Note-Taking and Recall. Journal of Educational Research. 67, 291-292.
- FRASE, L.T. (1968b). Effects of Question Location, Pacing and Mode Upon Retention of Prose Material. Journal of Educational Psychology. 59, 244-249.
- FRASE, L.T. (1968d). Some Data Concerning The Mathemagenic Hypothesis. American Educational Research Journal 5, 181-189.

- FRASE, L.T. (1970). Boundary Conditions for Mathemagenic Behaviour. Review of Educational Research. 40, 337-347.
- FURNEAUX, W.A. (1962). The Psychologists and The University Quarterly. 17, 33-47.
- GAGNE, R.M. & SMITH, E.C. (1963). A Study of the Effects of Verbalization on Problem Solving. Journal of Experimental Psychology. 63, 12-18.
- GLASS, G.V. & STANLEY, J.C. (1970). Statistical Methods in Education and Psychology. Englewood Cliffs, New-Jersey. Prentice Hall Inc.
- GLEAVE, M.B. (1971). Population and Settlement in Tropical Africa. Oakland, Hicks Smith and Sons Ltd. 5-23.
- GRAY, W.S. & ROGERS, B. (1959). Maturity in Reading. Chicago: Chicago University Press.
- GRONLUND, N.E. (1976). Measurement and Evaluation for Teaching: Third Edition, London, Macmillan Publishing Com. Inc.
- HALL, W.E. & ROBINSON, F.P. () An Analytic Approach To The Study of Reading Skills. Journal of Educational Psychology. 36, 429-442.
- HANSON, J.W. (1964). The Spirit of the Teacher in Nigeria, in Ikejiani, O. (ed) Nigeria Education. Lagos. Longmans Nigeria Limited.
- HARTLEY, J. (1976). Lecture handouts and Students' Note-taking. Programmed Learning and Educational Technology. 13, 58-64.
- HOWE, M.J.A. (1970). Note-taking Strategy, Review and Long-Term Retention of Verbal Information. Journal of Educational Research. 63. 100-104.
- IBEGBULAM, C.A. (1980). Effects of Orienting Stimuli on the

Attitude and Achievement in Biology of a Group of Nigerian Secondary School Pupils. Unpublished Ph.D. Thesis. University of Ibadan, Ibadan.

- IYEWARUN, S.A. (1981). Objectives, Materials and Methods of Teaching Social Studies in the Secondary Schools. Unpublished M.Ed. Research Project, University of Ilorin, Ilorin.
- JAROLIMEK, J. (1971): Social Studies in Elementary Education. New York, Macmillan.
- JONES, H.G. (1960). Relationship Between Personality and Scholastic Attainment. Bulletin of British Psychological Society 40,42
- KERLINGER, F. N. (1979). Foundations of Behavioural Research. Second Edition, London Holt Rinehart and Winston.
- KHULVAVY, R.W., DYER, J.W. & SILVER, L. (1975). The Effects of Note-Taking Expectancy on the Learning of Text Materials. Journal of Educational Research. 68, (10) 363-365.
- KIEWRA, K.A. (1989). A Review of Note-Taking: The Encoding-Storage Paradigm and Beyond. Educational Psychology Review 1, 147-172
- KIEWRA, K.A. et al. (1991) Note-Taking Functions and Techniques. Journal of Educational Psychology 83(2) 240-245.
- KIEWRA, K.A., MAYER, R.E., CHRISTENSEN, M., KIMS & RISCH, N (1991). Effects of repetition on Recall and Note-Taking: Strategies for Learning from Lectures. Journal of Educational Psychology. 83, 120-123.
- KINSTON, W. (1968). Recognition and Recall of Organised List in Free Recall. Journal of Experimental Psychology. 70, 481-487.

- KLING, PAUL (1966). Extraversion, Neuroticism and Academic Performance Among Ghanaian University Students. British Journal of Educational Psychology. 36, 93-94.
- KLING, P. & GALE, A. (1971). Extraversion, Neuroticism and Performance in Psychology Examination. British Journal of Educational Psychology. 41. 90-93.
- KRECH, et al (1967). In Oskamp's Attitudes and Opinions New-Jersey. Prentice Hall, Inc.
- LEITH, G.O.M. (1973). The Effects of Extraversion and Methods of Programmed Instruction on Achievement. Educational Research 15, 150-153.
- LOCKE (1977). An Empirical Study of Note-Taking Among College Students. Journal of Educational Research. 71, 93-99.
- MACHART, N.C. (1977). A Study of the Attitudes of Selected 6th Grade Students Concerning Social Studies. Dissertation Abstract 38(11): 6361A-6988A, 6668A.
- MADDOX, H. (1963). How to Study. London, Pan Books Limited.
- MAKINDE, M.A. (1979). Integrated Social Studies: A handbook for Teachers. London, Oxford University Press.
- MANSARAY, A. (1984). Effects of Two Modes of Concept Presentation and Cognitive Style on the Attainment of Some Social Studies Concepts by Secondary School Students. Unpublished Ph.D Thesis, University of Ibadan, Ibadan.
- MAYER, R.E. (1980). Elaboration Techniques That Increase The Meaningfulness of Technical Test. An Experimental Test of Learning Strategy Hypotheses. Journal of Experimental Psychology. 72, 770-784.
- MAYER, R.E. (1984). Aids to Test Comprehension: Educational Psychologist, 19, 30-47.

- MAYER, R.E. & BROMAGE, B.K. (1980). Different Recall Protocols for Technical Text Due to Advance Organisers. Journal of Educational Research. 72(2), 209-225.
- MICHAELIS, J.U. (1968). Social Studies for Children in a Democracy Recent Trends and Development. New Jersey. Prentice Hall Inc. Engle Woodcliff New Jersey.
- MICHAELIS, J.U. (1969). In Cottle (ed.) Social Studies for Young Adolescents Programmes for Grades 7, 8, and 9, Curriculum Series No. 6. Washington D.C. National Council for Social Studies.
- MILLER, G.A. GALANTER, E.D. & PRIBRAM, E. (1960). Plans and The Structure of Behaviour. New York, Holt Rinehart and Winston.
- NATKING & SHAHTER, E. (1969). The Effects of Adjunct Questions on Short and Long Term Recall of Prose Materials. American Educational Research Journal. 6, 425-432.
- NEISSER, U. (1967). Cognitive Psychology. New Jersey. Appleton Century Crofts.
- NELSON, L.A. (1988). Attitudes of Western Australian Students Towards Micro Computer. British Journal of Educational Technology. 19(1). 53-57.
- NERC (1981). The Concept of Social Studies Education for Schools and Colleges. Ibadan, Onibonoje Nig. Ltd.
- NERC (1982). Primary School Syllabus in Social Studies.
- NOLL, V.H. & SCANNEL, D.F. (1972). Introduction to Educational Measurement. Houghton. Mufflin Boston.
- NORWICH B & DUNCAN, J. (1990). Attitudes, Subjective Norm, Perceived Preventive Factors, Intentions and Learning Science: Testing a Modified Theory of Reasoned Action. British Journal of Educational Psychology 60 (3), 312-321.

- NWANA, O.C. 91979). Test and Measurement for Teachers Nelson. Africa.
- OBEMEATA, J.O. et al (1981). Social Studies Methods: Associateship Certificate in Education Series (Institute of Education University of Ibadan, Series Ibadan Heinemann Nig. Limited.
- ODUFUYE, F. O. (1985). Nature and Measure of Attitude of Formation and Changing of Attitude. Seminar Paper presented at Faculty of Education, University of Ibadan, Ibadan.
- OGUNSANYA, M. (1984). Introduction to the Methodologies of Social Studies. Ibadan. Evans Brothers Nigeria.
- OGUNSOLA, W.O. (1983). Teachers Preferences for Methods of Teaching Social Studies. Unpublished M.Ed. Project Work, University of Ibadan.
- OGUNSOLA, W.O. (1990). The Effectiveness of Selected mathemagenic Activities and Teachers Instructional Style on Students Cognitive and Affective Learning in Social Studies. Unpublished Ph.D. Thesis, University of Ibadan, Ibadan.
- OKUNROTIFA P. O. (1972) . An Investigation Into Nigerian Pupils' Attitude to and Achievement in Geography by programmes instruction. West African Journal of Education. 1(2)
- OKUNROTIFA P.O. (1974). ~~was~~ Recent Trends in Geography and Their Implication for Supervision of Instruction. The Social Studies 65(4) .
- OLAOGUN, M.O. (1984). A Study of Acceptability of the New Social Studies in Post Primary Schools in Oyo Local Government Area of Oyo State. Unpublished M.Ed., Projects. University of Ibadan, Ibadan.
- OLAWEPO, J.A. (1984). Student-Teachers Attitude to and Performance in Social Studies. Unpublished M.Ed.

Project. University of Ibadan, Ibadan.

- ORIMOLOYE, P.S. (1978). The Issue of Selecting and Organising The New Integrated Social Studies Content, Paper Read at SOSAN Conference, University of Ibadan, (1978).
- OSHO, I. (1985). The Effects of Problem-Solving and Conventional Teaching Strategies on Students Achievement on Social Studies, Ph.D. Thesis, University of Ibadan, Ibadan.
- OSKAMP, S. (1977). Attitudes and Opinions. Prentice Hall.
- PEPER, R.J. & MAYER, R.E. (1978). Note Taking as a Generative Activity. Journal of Educational Psychology. 70, 514-522.
- PEPER, R.J. & MAYER, R.E. (1986). Generative Effects of Note-Taking During Science Lectures. Journal of Educational Psychology. 78(1), 34-38.
- PETERS, D.L. (1972). Effects of Note-Taking and Rate of Presentation on Short Term Objective Test Performance. Journal of Educational Psychology. 63, 276-280.
- QUARTEY, S.M. (1983). 'The Teaching of Social Studies and National Development.' Paper read at the SOSAN Annual Conference, Enugu, 1983.
- RAMSETT, D.E. (1983). JOHNSON, J.D. & ADAMS, C. (1974). An institutional Study of Student Attitudes Towards Principles of Economics. Journal of Experimental Education. 42(3).
- ROBERT VOTH (1975). On Lecturing. The Social Studies LXX (Nov/Dec. 1975) 247-248.
- ROBINSON, F.P. (1970). Effective Study. Evanston Harper and Row Publishers.
- ROTHKOPF, E.Z. (1965). Some Theoretical and Experimental Approaches to Problems in Written Instruction in J.D.

Krumboltz (ed) Learning and the Educational Process. Chicago, McNally, 193-221

ROTHKOPT, E.Z. (1970). The Concept of Mathemagenics. Review of Educational Research, 40(3), 325-336.

RUSHTON, J.R. (1966). The Relationship Between Personality Characteristics and Scholastic Success in 11-year old Children. British Journal Educational Psychology, 36, 178-184.

SAVAGE, R.D. (1966). Personality Factors in Academic Attainment in Junior School Children. British Journal of Educational Psychology, 36, 91-94

SCHIBECI, R.A. (1984). Attitudes in Science, an up-date. Studies in Science Education 11, 26-59.

SHAUELSON, R.J., BERLINER, D.O., RAVITCH, M.M. & LOEDING, DAVID: Effects of Position and Type of Question on Learning from Prose Material: Interaction of Treatments Within Individual Differences. Journal of Educational Psychology 66(1) 40-48.

SHAW & WRIGHT (1962). Scales For Measurement of Attitudes. MC Graw-Hill, Inc. New York.

SHERIF, C.W. & SHERIF M. (1967). Attitudes as the Individual's own Categories: The Social Judgement-Involvement Approach to Attitude and Attitude change in C.W. Sherif and M. Sherif (ed) Attitudes Ego-Involvement and changes. New York. Wiley.

SLAMEEKA, N.J. (1967). (ed.). Human Learning and Memory Selected Readings. Oxford. Oxford University Press Ltd.

SMITHERS, A.G. & BATCOCK, A. (1970). Success and Failure Among Social Scientists and Health Scientists at a Technological University. British Journal of Educational Psychology, 40, 44-53.

- SKOTKO, D.J. & ROURKE, D.L. (1980). The Effects of Time in Short-term Storage (STS) on Subsequent Recall From Long-Term Memory (LTM). Psychological Record, 30(3), 347-360
- TALLAND, G.A. (1968). Disorders of Memory and Learning. London Penguin Books Ltd.
- TUCKMAN, B.W. (1975). Measuring Educational Outcomes: Fundamentals of Testing. New York, Harcourt-Brace. Jovanovich International Edition.
- TUCHMAN, B.W. (1978). Conducting Educational Research. New York. Harcourt-Brace Jovanocich Inc.
- UNOH, (1979). Reading to Remember: Ibadan University Press Ltd. Ibadan.
- UWAKWE, C.B.U. (1984). The Relative Effectiveness of Note-Taking, Summarizing and Repetition on Students Fact Recall. Unpublished Ph.D. Thesis, University of Ibadan.
- VABAZA, K.T. (1974). The Relationship Between Some Personality Factors and Academic Performance Among Some Nigerian Secondary School Students. Unpublished M.Ed. Project University of Ibadan, Ibadan.
- VENABLE, E. (1963). Social Differences Among Day Release Students in Relation to Their Recruitment and Exam. Success. British Journal of Social and Clinical Psychology, 3, 138-152.
- WALKO, J.K. (1989). The Effects of Varied Note-Taking Strategies on Students Ability to Profit from Visualized Instruction as Measured by Tests Assessing Different Educational Objectives: Ph.D. Dissertation. The Pennsylvania University, 1981 in Dissertation Abstract International Vol. 51(5): DA 9018293.
- WEEKS, L.H. (1972). An Inquiry Into The Attitudes of Infants Teachers. Journal of Educational Research, 15(1), 10-15.

- WEENER, P. (1974). Note-Taking and Student Verbalization as Instrumental Learning Activities in Instructional Science. 3, 51-74.
- WESLEY EDGAR (1950). Teaching Social Studies in High School. Boston, Health and Company. 128-129.
- WESLEY, E.B. (1978). Foreward in R.D. Berr, J.L. Barth and S.S. Shermis: The Nature of Social Studies. Palm Springs C.A. ETC Publication.
- WILSON, J.D. (1971). Predicting Levels of First Year University Performance. British Journal of Educational Psychology 41, 163-170.
- WITTROCK, M.C. (1974). Learning as a Generative Process. Educational Psychologist 11, 87-95.
- WITTROCK, M.C. & DUCTOROW, M. (1975). Reading as a Generative Process. Journal of Educational Psychology. 67(4), 484-489.

UNIVERSITY OF IBADAN LIBRARY

APPENDIX 1

EYSENCK PERSONALITY INVENTORY (EPI)**Directions**

The items below contain pieces of information required from you. Please, check the items and tick (✓) either 'Yes', 'No', or undecided according to the statement that best describes you or your opinion.

Statement	Yes	No	Undecided
1. Do you often long for excitement?			
2. Are you usually carefree?			
3. Do you stop and think things over before doing anything?			
4. Do you generally do or any things quickly without stopping to think?			
5. Would you do almost anything for a dare?			
6. Do you often do things on the spur of the moment?			
7. Generally, do you prefer reading to meeting people?			
8. Do you like going out a lot?			
9. Do you prefer to have few but special friends?			

10. When people shout at you, do you shout back?
11. Can you usually let yourself go and enjoy yourself a lot at a party?
12. Do other people think of you as being very lively?
13. Are you mostly quiet when you are with other people?
14. If there is something you want to know about, would you rather look
15. Do you like the kind of things that you need to pay close attention to?
16. Do you like being with a crowd who play jokes on one another?
17. Do you like doing things in which you have to act quickly?
18. Are you slow and unworried in the way you move?
19. Do you like talking to people so much that you would never miss a change of talking to a stranger?
20. Would you be very unhappy if you could not see lots of people most of the time?
21. Would you say you are fairly self confident?
22. Do you find it hard to really enjoy yourself at a lively party?

23. Can you easily get some life into
a rather dull party?

24. Do you like playing pranks on others?

--	--	--

UNIVERSITY OF IBADAN LIBRARY

7. Social Studies lectures teach us how to think.
8. What we learn in Social Studies is very true to life.
9. Social Studies does not tell us about economic production and scientific inventions.
10. I feel very lively in Social Studies lectures.
11. I spend too much money buying notebooks and handouts in Social Studies.
12. Too much time is spent on Social Studies than on Education or other subject in my combination.
13. Attending Social Studies lectures makes me nervous.
14. I feel calm in a Social Studies lecture.
15. I always help others students to solve their problems in Social Studies.
16. It takes me a lot of time to understand new concepts in Social Studies.
17. Social Studies has developed my interest in national and international events.
18. Since I started learning Social Studies, I have developed more interest in tradition and culture of my people.
19. I now obey rules and regulations more/better than before.

20. Social Studies should be made compulsory for all teachers in-training.
21. I shall offer Social Studies as my teaching subject in the University.
22. Reading Social Studies at NCE level has no future prospect.
23. I read Social Studies because it is a new subject which has no prerequisite for admission.
24. All college students should take an introductory course in Social Studies.
25. A good knowledge of Social Studies will help me secure a job after College training.
26. No matter how much I try, I still do not do well enough in Social Studies.
27. It is easier for a Social Studies student to find job than students of other subjects.
28. Social Studies involve extensive reading.
29. I like reading textbooks on Social Studies.
30. I obtain much of my Social Studies knowledge or information from sources other than the textbooks.
31. Social Studies textbooks are difficult to find to buy.
32. Newspapers and Magazines serve as sources of Social Studies information.

SECTION B

MATRICULATION NUMBER: _____

SUBJECT COMBINATION: _____

SEX: (MALE) _____ (FEMALE): _____
(Tick as Appropriate)

HIGHEST QUALIFICATION TC II [] SSCE/WASC []

APPENDIX III

STUDENTS ATTITUDE TO SOCIAL STUDIES QUESTIONNAIRE:CONTRIBUTION OF EACH ITEM TO THE TOTAL CONSTRUCT

Item No.	St. Dev.	Corr.	Average
			Item-Total Correlation
1	1.1	0.3371	0.2416
2	1.16	0.2635	0.1588
3	1.11	-0.263	-0.1289*
4	1.01	0.2846	0.1947
5	0.76	0.3488	0.2842
6	1.15	0.1079	0.0005
7	0.82	0.487	0.4253
8	0.93	0.343	0.2631
9	1.17	-0.071	-0.1778*

10	0.81	0.071	0.2266
11	0.71	0.0118	-0.0544*
12	0.49	0.4825	0.4462
13	0.9	0.3787	0.3033
14	1.06	0.0699	0.0291*
15	1.02	0.3306	0.2419
16	0.91	0.3503	0.2725
17	1.22	0.1377	0.0240
18	0.95	0.4862	0.4140
19	0.96	0.3515	0.2693
20	1.06	0.3515	0.2604
21	0.84	0.0119	-0.0900*
22	0.64	0.6285	0.5902
23	0.78	0.395	0.3392
24	0.79	0.371	0.3048
25	0.76	-0.0365	-0.1069*
26	1.21	0.4714	0.3765
27	0.87	0.0214	-0.0597*
28	0.98	0.4163	0.3364
29	0.91	0.3567	0.2793
30	0.74	0.202	0.1345
31	1.01	0.3294	0.2416
32	0.94	0.3862	0.3078
33	0.8	0.0367	-0.0380*
34	1.1	0.2476	0.1479
35	1.03	0.523	0.4477
36	0.95	0.2187	0.1320
37	0.91	0.5047	0.4372

38		0.86		0.4691		0.4029
39		1.28		0.3494		0.2383
40		0.97		0.3747		0.2930

UNIVERSITY OF IBADAN LIBRARY

APPENDIX IV

FACILITY INDICES OF THE SSIRT

ITEM	FACILITY	ITEM	FACILITY INDEX
1	.71	16	.58
2	.62	17	.75
3	.64	18	.42
4	.51	19	.67
5	.79	20	.46
6	.38*	21	.38*
7	.37*	22	.47
8	.67	23	.48
9	.69	24	.58
10	.45	25	.53
11	.57	26	.52
12	.52	27	.62
13	.55	28	.93
14	.56	29	.84
15	.53	30	.54
31	.61	46	.68
32	.21*	47	.42
33	.49	48	.30*
34	.62	49	.63
35	.50	50	.58
36	.53	51	.47
37	.52	52	.22*
38	.41	53	.25*
39	.64	54	.67
40	.55	55	.79
41	.64	56	.72
42	.33*	57	.48
43	.66	58	.32*
44	.65	59	.42*
45	.42	60	.55

*Deleted from final copy of tests.

APPENDIX V

Table of Specification for the SSIRT

CONTENT	OBJECTIVES			
	REMEMBERING	UNDERSTANDING	THINKING	TOTAL
1. The concept of population, growth and structure.	1, 4, 6, 7,	2, 8, 16	3, 5, 9	12
2. Factors of population distribution and movement.	12, 13, 14, 15, 19, 21,	18, 25,	20, 24	10
3. Sources of Population data.	31, 32, 33, 34, 35, 38, 40	36, 32, 39	-	10
4. Population policy in Nigeria. tion data.	27, 30, 41, 42	26, 28	29	7
5. Advantages and disadvantages of large population.	57, 58	53	17	10
6. The Malthusian Population theory and resources.	43, 44, 48, 49	45, 46, 47, 60	50, 56, 59	11
Total	31	18	11	60

APPENDIX VI

Prepared Lecture NotesSOCIAL STUDIES - POPULATION STUDIES

LECTURE I

TOPIC: The Concept of Population

1.0 Meaning and Importance of Population

Population means different concepts to different people and to different disciplines. A biologist takes population as a collection of plants and animals in a given environment. He sees population as the totality of the inhabitants of a given ecological space. A demographer and a sociologist refer to population as the total number of people in a given community or a given state. Their concept of population is the total number of all human beings living in a given territory.

Population is, on the other hand, defined as the quantity and quality of the human inhabitants of a defined territory. Quality deals with the mode or condition of living of a set of people while quantity is reflected in the actual numerical figure of the inhabitants that occupy a given area.

Population plays an important role in the development

process of a place or country: (1) It is the most important resource base of the state; (2) Development plan for any state is usually based on and dictated by the population and resources of that state.

2.0 Population Growth:

Right from the pre-historic time, world population has steadily increased. During the first century A.D. World population was below 300 million. By the 18th century it grew to 600 million. By 1820 A.D. world population grew to 1,000 million. At the beginning of 20th century it grew up to 2,000 million. In 1960, it grew to 3,000 million and in the 1990s it is estimated at 6,500 million. The continuous increase in the number of people living in the world is known as population growth.

World population has consistently doubled itself within increasingly smaller number of years. It once doubled itself in 1700 years, but within the last 30 years it has again doubled itself.

During the 1980s an extra of 300,000 people was added to the world population everyday. More than 12,000 is added each hour.

3.0 Population Growth Rate

The rate at which population increases at specific period of time is called population growth rate. The growth rate differs from country to country and from one economy to another. Growth rate is lower in the developed world. For example, Western Europe has a growth rate of 0.6% per annum. Asia, African and Latin America have growth rates of 2.5% and above per annum.

Population growth, in any country, takes two ways. First, population increases as a result of natural change (more births) and secondly through migration (immigration into the country).

4.0 Determinants of Population Growth

The population of a country is usually affected by changes in birth rate or fertility rate, death or mortality rate and by migration. High birth rate, low death rate and migration induce increase in population while other factors such as plague, diseases, famine, flood, and wars lead to decrease in population. In recent times, the factors which lead to increase in population have gained an edge over those that decrease population.

Natural increase in population is due to the balance between births and deaths in a given period of time. If the balance is negative, decrease occurs but when it is positive increase occurs.

Rapid population increase is usually due to the following reasons.

1. Increase in birth rate:

The crude birth rate is the ratio between the number of births in a single year and the total population expressed as a number per thousand. Developing countries such as Nigeria has 50 per thousand while developed countries like West Germany has 9.7 per thousand. Japan has 17.2 per thousand.

Factors which influence the birth rate in a country include:

- (a) Demographic structure of the country
- (b) Educational level and awareness of the people.
- (c) Religion of the majority.
- (d) Social customs and practices.
- (e) Diets and health of the people.
- (f) Politics which includes war, apartheid, and sanctions.

After wars demographic recovery brings about "fertility bulge".

2. Fall in Death Rate:

Crude death rate or mortality rate is the ratio between the number of deaths and the total population, in a single year, expressed as a number per thousand.

As with birth or fertility rate, there is a link between death rate and economic development. Countries with high living standards experience the lowest death rate 5 per thousand, while the economically backward areas have the highest rate of 30 per thousand. Malawi and Ethiopia have 25 per thousand.

Factors which influence death rate are as follows:

- (a) Demographic structure.
- (b) Medicine and sanitation.
- (c) Social class and or standard of living.
- (d) Occupation of the people.
- (e) Place of residence.

3. Other Determinants:

Some other factors also play their parts in determining the rate of population growth. They include the following:

- (a) Increased employment opportunities.
- (b) Migration.
- (c) Rise in standard of living.

5.0 Population Structure

The composition of the population is known as its structure. Sociologists study the divisions of population into family sizes, marital statuses, income levels, educational levels e.t.c. In Social Studies population structure is considered in terms of age, sex, occupation, marital status, dependency ratio and pattern.

Population structure influence the rate of population growth. It determines the level of economic development. It dictates the rate of demand for food, services and so on.

Aspects of population structure can be briefly divided as follows:

I Age Structure:

This is the division of the population into age groups, these are:

- (a) Children - usually 0-16 years.
- (b) Adults - usually between 16 and 64 years.
- (c) The Aged - 65 years and over.

Children - The group includes babies, children and adolescents. It is largely a non-productive group. It is also non-reproductive. In developing countries, almost half the population is in this group. In the developed countries the age accounts for only 30% of the population.

Adults - 16-64 years.

The adults age group, particularly those between 16 and 49 years, is the most productive and reproductive group. The age group

supports the other two groups. It is the 'mobile group': This group is sometimes divided into two 16-35 and 35-64 and called younger and older adults.

That Aged - 65 years and over

The group is non-reproductive. It has majority of females who are mostly widows. In the developing countries, they form 3 per cent or less of the total population whereas in the developed countries the proportion is above 15 per cent.

Nigeria had only 2 per cent in the 1963 population census, as aged.

Importance of Knowing the Age Structure

The distribution of age group influences social and

economic development.

It determines the level of demand of goods and services. Industrial production is sometimes manipulated to satisfy the needs of the age groups.

Age-Sex Pyramid

The distribution of age and sex groups is usually represented by a diagram called the age-sex pyramid.

Four types of age-sex pyramids are identified as:

- (a) Progressive - shows broad base and narrow apex. Large population of 0-15 years about 45-55 per cent. The structure is common in the developing countries with poor living conditions, high fertility, poor diet and health and little medical care.
- (b) Regressive - obtains where birth and death rates are low and declining. Children account for under 30 per cent of the total population. The aged accounts for 15 percent. Common in developed countries with high living standards, good food and medical care.
- (c) Stationary - exists where children accounts for 35-

40 per cent and aged about 10 percent of the total population - pattern remains the same for many years.

(d) Intermediate - exists in a country passing through several stages of development.

- It may be progressive now but becomes regressive shortly after.

II. Sex Structure:

This is grouping the total population into males and females.

In nearly every country ratio of male to female varies between 90:110 to 99:101. Countries experiencing wars, emigration, famine and diseases tend to have low male proportion. Countries experiencing economic buoyancy, immigration and better health care have high male proportion.

III. Occupational Structure:

The economically active portion of the population can be grouped under primary, secondary and tertiary occupational groups. We sometimes group into extractive, manufacturing and services groups.

IV. Marital Status:

This involves grouping the total population into single (unmarried) married, widowed, divorced. Marital status groups are influenced by changes in age structure, sex ratio, social institutions and economic conditions.

Dependency Ratio:

The work force of a country consists of the active section of the population. This is made up of people above 15 years of age.

Factors such as health condition, employment availability and rate of urbanisation influence the size of the active population.

Dependency ratio gives an indication of the degree to which unproductive groups in the population depend on the working population. It is obtained by adding the total population under 15 to the total population of 65 and above and dividing it by the total population of 16-64 years.

$$\text{Dependency ratio} = \frac{0-15 + 65 \text{ and above}}{16 - 64 \text{ years}}$$

Problems of population structure in Africa:

African countries are characterized by young people who

are less than 15 years old, more women than men, high marriage rate, small labour force size, high dependency ratio and poor quality of the labour force. All these lead to the socio-economic problems of Africa.

These includes:

- (a) The predominance of youths in African population constitutes great burden on the economy.
 - (b) Large number of youths causes large number of job seekers.
 - (c) Unemployment leads to greater poverty.
 - (d) Low level of education, poor health and high dependency ratio lead to low level of productivity.
- Long term economic and social planning is seen as the only long term remedy.

LECTURE II

POPULATION DISTRIBUTION AND CHANGE

Population Distribution

The way people are distributed or scattered over a given space of land or country is referred to as population distribution. All over the world, people are not evenly distributed among land masses. Some areas have dense population while others are almost totally uninhabited.

One ultimate factor of population distribution is economic potential. All other factors are contributory to it. People will live only where they can find a means of earning a living. However, factors which influence population distribution are grouped as physical, historical, political and economic factors.

Physical Factors Influencing Population Distribution

Physical factors which cause population to be so distributed all over the world include:

- (i) Accessibility to places of residence and work.
- (ii) Relief and soil fertility - lowlands and fertile lands carry heavy population - e.g. Prairies of Canada, Campus of Brazil and Nile Valley of Egypt.
- (iii) Climate: Moderate temperatures, rainfall and humidity

induce people to settle and live in a place.

- (iv) Natural Vegetation - Thick jungles repel population lights forest and grasslands attract and support dense population.
- (v) Water Supplies - People live where they can secure water e.g. Oases in the deserts.
- (vi) Mineral Resources - Usually people tend to go to places where plenty of minerals are available. They even endure harsh climatic conditions so as to benefit from the minerals.
- (vii) Diseases - where there are diseases, people move away from such places, e.g. River blindness has caused population to decrease in Northern Ghana.

Historical Factors Influencing Population Distribution

Various historical developments have been associated with the sparseness of population in certain parts of the world.

These factors include:

- (i) Slave Trade: Africans were carried away as slaves to Europe and America during the 18th and 19th centuries.

Between 10 and 15 millions were carried away from Africa.

- (ii) Inter-tribal Wars: During inter-tribal wars great loss of lives usually occur. In the 19th century inter-tribal wars in Yorubaland, Akan land in Ghana, Zululand in Southern Africa many people died. Sudan, Mozambique and Somalia are now being depleted of population because of wars.
- (iii) Religious Persecution: Persecuted people in Britain moved away to New England (America) as 'Pilgrim Fathers' during the 17th century. The state of Utah and its capital Salt Lake City were settled by the American Mormons who were forced to move there in the 19th century.

Political Factors Influencing Population Distribution

Some political policies and decisions which influenced the distribution of population in different parts of the world are apartheid, and Resettlement Schemes.

- (i) Apartheid: The policy of separation of blacks and whites in South Africa. 14 millions blacks now occupy 20% of the land area while 6 million whites occupy the remaining

80%.

(ii) Resettlement Schemes: People are arbitrary removed from their homeland and resettled at the dictates of government.

- Millions of Russians removed to the wastes of Siberia.

- Britain evacuated the convicts to Australia.

- In Nigeria inhabitants of Kainji, Abuja, Maroko (Lagos) were moved elsewhere.

(iii) Creation of Forest Reserves: Large portion of arable lands are reserved and population concentrate in small portion of land. It brings congestion and acute shortage of farmlands.

Economic Factors Influencing Population Distribution

Economic factor is the most important factor influencing population distribution. Such factors include:

(i) Pressure of population on land which leads people to move to other areas.

(ii) Discovery of Mineral deposits - attracts large number of miners, carriers and other workers.

(iii) Urbanisation - Urban facilities draw large population

to it.

- (iv) Industrialization - Industrial areas provide jobs and services which large number of people look for.

Population Density

Population, all over the world is unevenly distributed. Two types of density divisions, ecumene and non-ecumene are identified. Ecumene covers about 60% of total land surface while non-ecumene covers 40%.

Population density refers to the ratio of the number of people to a given unit of land.

Three-fold divisions of densities are identified.

- (a) Area of very dense population (over 100 people per km^2).
- (b) Area of moderate population density (25-100 people per km^2).
- (c) Area of low population density (below 25 people per km^2).

Examples of specific densities:

- (a) Areas of very dense population - Over 100 per km^2 .
- (i) Region of high living standards: England, the low countries, West Germany, North-East, U.S.A.

- (ii) Region of low living standards: South-East China, India, East-Indies.
- (b) Areas of moderate population density (25-100 per km²).
 - (i) Region of high living standards - France, South-East, Australia, South-East, Canada, Midwest U.S.A.
 - (ii) Region of low living standards - Turkey, Nigeria South-East Brazil, Mexico.
- (c) Areas of low population density (below 25 per km²).
 - (i) Region of high living standard. Sweden Norway, New Zealand, Western Canada.
 - (ii) Regions of low living standards - Northern Africa Central Brazil, Patagonia, New Guinea.

Population Distribution and Resources

The survival of man depends on the availability of natural resources such as forest, water, mineral and air, which produce the basic necessities of life.

The relationship between population size and the available natural resources to sustain that population leads to the idea of over population, under population and optimum population.

Overpopulation - exists where there is too great population in a given area for the actual or potential resources to support.

- Symptoms of overpopulation include, low incomes, high levels of unemployment, declining living standards, famine and malnutrition.
- Temporary solution to this are importation, movement away from the place etc.
- Permanent solutions are long-term economic planning, industrialization, birth control.

Underpopulation - exists where there are too few people in a given area to fully utilize the available resources. It occurs in a place where larger population could be supported by the same resources.

- Symptoms of underpopulation are inadequate work force or human resources, low population density, poor economic development migration to other areas for better employment opportunities.
- Examples of underpopulated areas are The Amazon Basin, The Congo Basin, The Canadia Coldlands, The Siberia of Eastern Rusia.

Optimum Population - is the theoretically perfect situation of the relationship of population and resources.

- exists where the size of population allows the maximum

utilization of resources; where man achieves maximum output per head and the highest possible living standards.

- Optimum population is not static.
- It changes with state of technology and improvement.

The terms overpopulation, underpopulation and optimum population do not take into account such factors as culture, racial character level of technology, differing expectations of life and aesthetic values. Food and employment serve to determine these situations in the developing countries but space decides them in the developed countries.

Factors of Population Change

Changes as population can be positive or negative. Some lead to rise in population while negative factors lead to decrease in population.

Three basic factors are migration, fertility rate and mortality rate:

Migration is the movement of people from one place to another.

- Migration is classified according to the different types, types of motive which induce them.
- There are unconscious drift, compulsory movement and

voluntary movement.

- Migration can also be classified as internal or international

Internal Migration: takes place within individual countries.

- involves short distances.
- involves moving from countryside to towns and from town to town or from towns to the countryside.
- in Nigeria movement is from the interior to coastal urban settlement for jobs trade, and social amenities.

International Migration:

- involves movement across international boundaries.
- greater distances are involved.
- migrants may move to totally different place (physical, social or economical and political differences may be experienced).
- examples of international migration include, movement of Africans as slaves to America, from Britain to New England, from Scotland to Nova Scotia, from France to New York and New France. China to Burma, e.t.c.

Seasonal migration, periodic migration and daily migration also occur. Migration can also be classified as temporary or permanent.

Components of Migration:

Two components of migration are immigration and emigration. Immigration involves moving into a particular country. Emigration is movement out from one particular country. Immigration raises number of population while emigration decreases the population of any one country.

Reasons for Migration:

Two broad factors induce migration.

These are the 'PUSH' factors and the 'PULL' factors.

Push factors encourage emigration while pull factors induce immigration.

The stronger and more wide spread these factors are, the farther will the migrants move.

A more detailed breakdown of reasons for population movement gives the following:

Physical factor such as harsh climates, difficult relief, poor soils, drought e.t.c.

Economic factors such as employment or unemployment promise

of wealth, farmland, low wages, high rents, poverty and social factors such as changes in family size, changes in family status and wealth, urban attraction like water, light, employment, entertainment. Urban repulsion such as congestion, pollution, traffic difficulties e.t.c.

Education may serve as both pull and push factors. Political factors such as movement away from persecution, seeking political asylum e.g. Russians to Western World.

UNIVERSITY OF IBADAN LIBRARY

LECTURE III

SOURCES OF POPULATION DATA

Sources of Population Data

The study of population requires extensive and accurate data because analysis of population structure and distribution depends on the availability of population statistics.

No effective long term planning can be accomplished without accurate population data. Population data are obtainable from the following sources - census vital registration, sample surveys population registers and migration statistics.

Population Census

The main source of population data is the population census. A census is defined as the total process of collecting, computing, processing and publishing demographic, economic and social data about all persons in a country. It involves the actual counting of the people within a geographical boundary.

Population census is a useful exercise because information derived from census is useful for analysing the present and to forecast the future population distribution, size and structure.

Planning for education, health, housing and employment

depends on population statistics derived from census.

Two important characteristics that should be ensured in any census count is periodicity and universality.

Census must also be taken simultaneously within a given country.

(a) Approaches to Population Census

Two basic approaches or methods of population census, all over the world are the defacto and the dejure approaches:

(i) Defacto approach: is one in which each individual is counted at the place where he/she is found at the time of the census. Each person is counted at sight. Britain and Nigeria adopt defacto approach.

(ii) Dejure approach is whereby people are counted according to their usual place of residence.

- U.S.A. and Brazil adopt the dejure approach. Brazil has tried the two approaches.

Nigeria finds the defacto method superior to the dejure method because of her cultural and occupational varieties. Some tribes are particularly mobile or do not have permanent place of usual residence.

(b) Brief History of Census In Nigeria

In Nigeria, the first population census took place in the colony of Lagos in 1863. Other census which took place after this involved all the protectorate and the colony. There were censuses in 1911, 1921, 1931, 1952/53, 1963 and 1973. There was no census in 1941 because of the World War II.

The 1952/53 census was considered, generally, as the first modern census conducted in Nigeria. But even then it lacked simultaneity. The actual counting did not take place at the same time all over the country. It was conducted in July 1953 in the East. This gave rise to many shortcomings associated with the results.

The 1952, 1963, and 1973 censuses were rejected on the account of various irregularities. However, all the planning which the government undertook were based on the data obtained from these imperfect censuses.

POPULATION OF NIGERIA ACCORDING TO THE 1911-1973 CENSUSES

YEAR	TOTAL POPULATION IN MILION	%INTERCENSAL INCREASE	ANNUAL GROWTH RATE
1911	16.06	-	-
1921	18.72	17	1.6
1931	20.06	7	0.9
1952/53	30.42	52	1.9
1963	55.66	83	3.6
1973	79.76	43	2.7

Basic Statistics in Census Count or Coverage of Census

In any census exercise information or statistics are normally obtained on the following: Sex, Age, Residential Status, Birth Place, Marital Status, Employment, Education, Religion.

In Nigeria, the National Population Commission is the body charged with the responsibility of conducting a census and the Federal Office of Statistics is a department of the commission which is responsible for organising the census data.

Problems of Censuses in Nigeria

Problems which militate against accurate census in Nigeria include the following:

1. Lack of sufficient and experienced specialists such as statisticians and demographers to conduct census.
2. Inadequate publicity and enlightenment of census

operations.

3. Inadequate time for planning.
4. Inaccessibility of certain parts of the country at certain periods of the year.
5. Insufficient training for the census functionaries.
6. Inconsistency in the approach of the headcount.

Counting

in churches, mosques, markets e.t.c. and still in the residential places lead to multiple counting.

7. Poor communication and transportation.
8. Lack of office and storage facilities.
9. Lack of up-to-date maps.
10. Problem of incomplete return of census questionnaire.
11. Politicization of census operations leading to inflation of figures, falsification of information.
12. Religious beliefs of some people went against giving the needed information to enumerators - Purdah system in the North, Jehovah witnesses in the south.
13. Late and inaccurate processing of census data.

Suggested Solutions to Census Problems

1. Adequate publicity and enlightenment should be given

before during census to allay peoples fears.

2. Adequate training should be given to all census functionaries.
3. Accurate and up-to-date maps should be drawn and supplied to the enumerators.
4. Fund should be readily made available.
5. Women enumerators should be used in counting women in purdah.
6. Provision of offices and stores, data banks should be ahead of census.
7. Greater enlightenment to enumerators.
8. Long term planning that would ensure that adequate and elaborate preparation is made should be ensured.

Uses of Census Data

Census statistics or data are the basic tools for planning, administration and research. All these three processes are undertaken in different aspects of a country's life such as in education, health, housing, employment, establishment of industries. Education: In educational planning knowledge of population in the school-going ages, is essential. Age and sex differences of children should be known. Number of children in

the different categories will determine the quality of school furniture. Equipment, teachers e.t.c.

Health: Health needs differ according to age and sex.

- Child care aid and family allowances to be paid to mothers

can only be calculated with the knowledge of data got from census.

- In developed countries number of old peoples homes and centres, housing and recreation centres are determined by population.

Housing: Accurate statistics will help the government to determine and provide shelter for the people. House types and number are determined by the population.

- Census gives an insight to distribution of houses between rural and urban centres.

Labour Supply, Manpower and Employment

Entrepreneurs base their determination of the site of their industries on availability of labour. (apart from other considerations).

- Quality of labour will depend on quality of population.

- Dependency ratio in a community marks the level of labour

supply.

Demand for Food

The census population statistics are important in the monitoring of the supply of food in any country. Number and structure of population must have clear correspondence with the food supply.

2. Vital Registration

Another source of population data is vital registration. It is a continuous registration of births; deaths; marriages, divorces, separation and adoptions. Vital registration is compulsory and backed by law.

While census deal with the state of population at a fixed point of time, vital registration is a source of continuous progress of or development in population. All incidences which continually affect population are recorded. Incidences of births e.t.c. are recorded and compiled at the time of occurrence or near the time of occurrence.

In Nigeria the registration of vital events was first adopted in the Lagos colony in 1867, It was made compulsory in 1868. A compulsory national vital registration system decree was passed in 1979 and the 1979

Federal Republic of Nigeria Constitution charged the National Population Commission with the responsibility of establishing and monitoring the machinery of continuous and universal registration of birth and deaths throughout the country.

3. Sample Surveys:

This is much like census:

Involves selecting a component or a segment to represent the entire population or a particular section of it.

- Sample survey is used to acquire information about a segment of the population.
- In 1991, immediately before and after the census sample surveys of one tenth of the country's population were taken
- Problems connected with selection of which portion or segment to survey include sampling errors and difficulty of making a sample truly representative.
- Sometimes difficult to make generalization - about entire population from the sample survey.

4. Population Registers

This is the continuous recording of the characteristics of each individual and of information on the events that occur to him or her. Each individual has his/her dossier.

Information contained in the dossier include, date of birth, date entered nursery school, primary school e.t.c. date travelled to other country, date returned, date got married e.t.c.

- Use of population register demands accuracy, literacy, honesty and meticulous record keeping.
- It also has financial implications for the government.

5. Migration Statistics

This involves the statistics on emigration and immigration. Data on emigration will account for decrease in population from source other than death.

Data on immigration tells of increases in population other than births. Two other divisions of these statistics are:

- (a) Internal Migration Statistics: Modern censuses now contain information on change of residence and place of birth. This facilitates migration analysis. Information on volume, frequency, direction, and characteristics of internal migration is obtained through this source.
- (b) International Migration Statistics: These are derived from the records of arrival at the international boundaries. Persons crossing international boundaries

usually have to produce their passports and to complete various forms on arrival or departure. The information required on arrival and departure forms vary from country to country.

UNIVERSITY OF IBADAN LIBRARY

LECTURE IV

POPULATION POLICY

1.0 Population Policy: is defined as all deliberate government and administrative programmes directed towards some clearly defined set of demographic objectives that can influence population growth, size, distribution and structure.

This definition has been adopted by the United Nations.

- Population policy may be directed either to increase the rate of growth of population or to regulate the rate and volume of migration within and outside the national boundaries. It may be directed towards reducing the actual population.

2.0 Types of Population Policy

There are three types of population policies:

- (a) Anti-natal policy - is aimed at reducing the rate of growth of population.
- (b) Pro-natal policy is aimed at accelerating or increasing the rate of growth of population.
- (c) Neutral policy is mid-way between pro and anti-natal policies.

It neither increases nor decreases population growth.

Examples of countries operating anti-natal policy are Egypt, Ghana and Kenya. Nigeria also started this type of policy recently. Examples of countries operating pro-natal policy are Gabon and Zaire.

A large number of African countries maintain neutral positions. Nigeria maintained this policy till the military administration came up with an anti-natalist policy. Generally all the various policies, especially those directed at reducing or checking the rate of population growth in Africa are not easy to introduce because of a number of factor.

Factors That Militate Against Anti-Natal Policy:

Among the factors which make the pursuit of anti-natal population policies less practicable in Africa are:

- (i) Religious Factor: Birth control through family planning is contrary to the teachings of some religions. - Roman Catholic Christians, Muslims and others oppose family planning.
- (ii) Social Factor: In Africa, custom such as polygamy, multiple marriages, early marriages, and prolonged child bearing militate against anti-natal policy. Africans men and women marry early and they continue to have children up

till the age of 50 and above.

- (iii) Economic Factor: Majority of Africans are farmers and they regard large number of children as assets. Children form a source of cheap labour. Africans oppose government policies that prevent their having large number of children.
- Children also form a sort of insurance for old age for Africans.
- (iv) Political Factor: Politics is a game of number. Majority wins elections. Africans encourage rapid growth of population for purpose of attracting more than a fair share of government allocation of revenue and other benefits.
- (v) Illiteracy: Illiterates do not understand why they should limit the number of their children. Only the educated and rational persons are able to anticipate the effects of early marriage and having too many children.
- (vi) Mis-information: Sometimes the true purpose or goal of population policies are not well explained. Ignorance causes opposition to anti-natal policy.

Population Policies in Nigeria:

The Armed Forces Ruling Council took a bold step to dictate policies to provide a framework and appropriate guidelines for

examining and solving the nations population problems.

It approved a national policy on population for development, unity, progress and self reliance in February, 1988.

Earlier, in 1970, the Nigerian government recognised that the country has been very populous by African and World Standards. In 1980, Nigeria's population was estimated as 84 million with a growth rate of 3.3 percent per annum. Nigeria population was and is the largest in Africa and one of the ten most populous countries in the world.

Fertility rate is put at 20 per thousand. Based on this information, the government took a step to arrest the rapid growth of population.

The population policy has the following goals:

- (i) to improve the standards of living and the quality of life of the people of the nation;
- (ii) to promote their health and welfare, especially through preventing pre-mature deaths and illness among high risk mothers and children.
- (iii) to achieve lower population growth rates through reduction of birth rate by voluntary fertility regulation method;

- (iv) to achieve a more even distribution of population between urban and rural areas.

The main features of the National Population Policy and Programme are:

- (i) respect for the right of each couple to determine voluntarily the number and spacing of their children;
- (ii) steps taken to accelerate the rate of growth of the economy rather than embark on direct action to achieve an immediate reduction in the overall birth rate;
- (iii) Integrating the various family planning schemes into the overall health and social welfare programmes of the country;
- (iv) helping the population to have access to information facilities and services that will allow them the freedom to choose the number and spacing of their children;
- (v) attending the rapid growth of migration from rural to urban areas through planned and controlled urban growth by pursuing a policy of integrated urban-rural development.

The third National Development Plan 1975-80 pursued the

above policy objectives and had the above features that had indirect implications for population issues.

The fourth National Development Plan 1981-85 recognised the close relationship between population and economic development. He also recognised that the general lack of up-to-date information on the various demographic processes should not be regarded as an indication of government's insensitivity to the effects of these factors on the development prospects of the country.

The government strengthened the social and economic forces; Provided facilities for family planning in its health institutions.

The government recognizes the fact that mortality rate is already on the decline and that overall rate of population growth has to be brought down.

The government also recognised the current public debate on abortion as a mechanism for birth control and improvement of individual health welfare.

The government came out with a policy on population which mandate a woman to give birth to only 4 children.

Targets for the Population Policy:

The population policy focused on achieving the following ends:

- (i) to protect the health of mother and child, to reduce the proportion of women who get married before the age of 18 years by 50% by 1995 and 80% by the year 2,000 A.D.;
- (ii) to reduce pregnancy to mothers below 18 years and above 35 years of age by 50% by 1995 and by 90% by the year 2,000 A.D.;
- (iii) to reduce the proportion of women bearing more than 4 children;
- (iv) to extend the coverage of family planning services;
- (v) to reduce the number of children a woman is likely to have during her life time;
- (vi) to reduce the infant mortality rate and crude death rate;
- (vii) to provide 50% of rural communities either basic social amenities in order to stimulate and sustain self-reliant development;
- (ix) to make family planning services available to all persons voluntarily wishing to use them.

The strategies for implementation of the national population policy was voluntarily and in accord with the fundamental human rights of the individual.

To effect the policy there was the creation of institutional arrangements. These are:

(i) The National Population Commission

The commission was established before the 1979 Second Republican Constitution.

It was responsible for formulating and implementing population policy and programme in Nigeria. The Commission was however only inaugurated by Gen. Babangida's regime on April 22, 1988. He backed the commission with a decree - Decree 23 of 1988 which stipulates that it should conduct an adequate census within 3 years.

The National Population Commission has a Chairman, 7 other members and Director General (ex-officio member). The Chairman was Alhaji Shehu Musa.

Functions and Powers of the N.P.C.

- (i) to undertake the enumeration of the nation's population periodically through census, sample surveys e.t.c.;
- (ii) to collect, collate and publish data on migration

- statistics;
- (iii) to arrange for the appointment and training of enumerators and all other categories of staff of the National Population Commission.
 - (iv) to provide information and data on population for purpose of facilitating national planning and economic development;
 - (v) to advise the Federal Government on other population and population related programmes and problems;
 - (vi) to disseminate information and educate the general public about the work of the National Population Commission;
 - (vii) to establish and maintain the machinery for continuous and universal registration of births and deaths;
 - (viii) to prepare and maintain a national frame for the delineation exercise for census and sample surveys.

Planned Parenthood Federation of Nigeria:

This organisation which was started by the Marriage Guidance Council in 1958, led to the establishment of the Family Planning Council of Nigeria in 1964.

- The Council's name changed to Planned Parenthood

Federation of Nigeria (PPFN) in 1979.

- the PPFN has now become independent.
- It is a private non-governmental, non-profit making organisation. It has the following objectives:
 - (i) to encourage the building up of healthy happy families through proper pacing of children;
 - (ii) to help parents to understand the value of having only those children for whom they can provide adequate care, nutrition, housing, clothing and education;
 - (iii) to educate women about unwanted pregnancies;
 - (iv) to advise and help those who want children but are having difficulty in doing so.

The first family planning clinic was established in Lagos in 1965. The organization registered only 702 clients in 1965 but now has over 300,000 clients on its register. The Federal Office of Statistics (FOS) in addition to the National Population Commission had conducted series of multi-purpose surveys in which data were collected on a wide range of demographic and related issues.

LECTURE V

ADVANTAGES AND DISADVANTAGES OF LARGE POPULATION

Introduction

The population of any country is the nation's most valuable asset. It is both the agent and the beneficiary of the national development. The size of the country's population can therefore bestow both advantages and disadvantages on the people.

Advantages of Large Population:

- (i) Increase In Working Population: Large population facilitates the availability of increased working population, which, if complemented with other necessary factors of production such as capital and land, will increase output and income. Thus, the economy will improve.
- (ii) Expansion of Domestic Market: A large population or an increase in population will expand the domestic market for goods and services of the nation's population. The larger the domestic market, the easier it is to engage in large-scale production with the consequent decrease in cost per

unit. The decrease in cost per unit of production will lead to a fall in price which will further expand the market.

- (iii) Enlarged Diversity of Skills and Talents: A large population is likely to be accompanied by diversity of skills and talents. Various skills possessed by the different sections and groups can be harnessed for increased and improved production.
- (iv) Strategic and Psychological Satisfaction: A large population can give a country both strategic and psychological satisfaction. In the days when national armies engaged in face-to-face battle, more people would be available to defend a country with a large population.
- (v) Prestige and Respect at International Level: Large population given a country a feeling of importance and security. A country with large population gains greater respect than countries with small population at International levels. In the United Nations and other international gatherings countries like Nigeria, Ghana and Egypt are more respected by member countries than others like Gabon, Liberia, or Burkina Faso. If benefits like

financial and educational aids are to be shared on the basis of population, Nigeria will get more aids than countries with small population. Even in attracting foreign loans, populous countries attract greater assurance of recovery from populous countries.

- (vi) Security Against Physical Hazards: In case of any physical hazards like famine, earthquake e.t.c. The death of a number of inhabitants will not affect the country with large population as adversely as it would affect one with small population Disadvantages of A Large Population:

Once the size of the population in a country passes above the optimum mark, various disadvantages will begin to set in unless this large population is complemented by other factors.

A large population leads to the following:

- (i) Overpopulation: A large population that is not accompanied by an increase in other factors of production particularly capital, may lead to overpopulation with its own problems such as overcrowding, spread of diseases, unemployment and so on.
- (ii) Increased Urbanisation: Increased urbanisation brings

about a strain on social amenities such as hospitals, water, electricity, housing e.t.c. The effect of urban congestion are crimes, pollution, health problems, transportation problems and so on.

(iii) Food Shortage: A large population without the necessary accompanying increased production leads to food shortage. This eventually leads to importation of food from other countries which will in turn lead to imbalance of payment between the exporting country and the country with large population. Such compulsory importation of food, or getting of food aid from abroad has disastrous consequences for the political pride of the importing country.

(iv) Political Instability: Rapid and uncontrolled growth of population leads to political instability because the government will not be able to control and provide the necessary social and economic facilities thus social and economic problems would arise.

(v) Increased Pressure on Land: There is the problem of increased pressure on land in a large population. Fractionalisation of previous holdings (lands) to small and insufficient land areas for farming, and which in turn leads

to continuous use of same plot and therefore may lead to diminishing returns from the land. Apart from decrease in agricultural production there will be shortage of land for industrial purposes and even for building purposes too. This may cause the lowering of standard of living of the people.

(vi) Unemployment: Large scale unemployment of qualified and less qualified hands will set in. Many people in the large population will be left without jobs and this unemployment will bring about many social evils and vices such as robbery, prostitution, drug pushing, duping e.t.c.

(vii) Heavy Dependency Ratio: Over-population leads to heavy dependency ration. The proportion of dependent people to those engaged in active and effective production will be high and this will in turn increase the number of dependents population.

Suggested Solutions To The Problems of Large Population

Preventing the occurrence of large population seems a better move than finding solutions for it after it has occurred. However, some solutions can be suggested for solving its occurrence:

1. Improving Agriculture, to solve food shortage, unemployment and lack of adequate nutritional components. Improved agricultural practices such as the use of fertilizer, crop rotation, improved methods of pest and diseases control and the use of machinery will result in improved agriculture.
2. Enlightenment through mass media to educate the people on the evil affects of large and uncontrolled growth of population.
3. *Encouraging Internal and International Migration.* Within the country, people may be encouraged to move from areas of congestion to less occupied areas. On the other hand skilled men and women can be encouraged to move outside the country to find jobs so as to plough back their acquired wealth into the country's economy.
4. *Introduction of Population Policy:* The government can enact various laws to control the growth of population. If the crude birth rate will decrease, the net increase at any given time will also decrease. This deliberate government and administrative programmes directed towards some clearly defined set of demographic objectives that can influence population size, distribution and composition should be undertaken.

Population Growth and Development

Government's development plans are usually based on the population size, growth and available resources. Thus, it is important that accurate knowledge of population and its features should be known by the government of the country. Unless the total number of people in a country, and its distribution over space is known provision of social facilities, such as health care, school buildings, housing and other utilities cannot be provided as necessary.

While growth of population is in a way beneficial to government in that it supplies manpower for effective production, uncontrolled growth of population hinders accurate planning.

The structure or quality of population, as against the mere number, affects economic development. Where too high a percentage of population is between 0 and 15 years, the dependency ratio will be high and thus net production will be very small. Few producers will support large consumers. Therefore, economic development will be small or slow.

Likewise, an increase in the number of old or aged will result in high dependency ration. Old people do not produce and they need be provided for. If the proportion of such people is

very high in an economy, the average standard of living in such people is very high in an economy, the average standard of living in such country may decline.

Increased number of the working population leads to pressures on the existing job market. If the economy can expand rapidly to provide the required jobs, not problem will arise but where it does not, then problem or under-employment or absolute unemployment sets in.

Thus, it can be established that there is a close link between population and economic development or otherwise.

UNIVERSITY OF IBADAN LIBRARY

LECTURE VI

MALTHUSIAN POPULATION THEORY AND RESOURCES

Introduction

During the period referred to as the Age of Mercantilism, the political and military despots sought to strengthen their political and military power and therefore economic strength by encouraging rapid population growth. These despots saw the growth of population as a means of increasing their own strength. But during this time, scholars as well favoured the increase in population but with the corresponding increase in resources to support the population. They had several notions of population increase.

(1) That the fact that population rises would be a means of sustenance for population. Population will lead to increase in production of food.

(2) Population rise/increase will bring increase in food supply. They thought that increased population will bring effective utilization of resources and division of labour to increase production.

(3) Scholars tended to be consensus that the number of people would determine amount of available resource exploitation.

(4) Scholars forgot the need to provide for and to nurture the young people until they are able to work and increase production.

One such scholar was Daniel Malthus whose own son Robert Malthus later developed and postulated the Malthusian Theory on Population. Robert, unlike his father saw the other side of rapid increase in population and large size of population.

MALTHUS THEORY

Thomas Robert Malthus was an English Clergyman who lived from 1766 to 1834. He is widely regarded as the first professional demographer. His book, entitled, "Essay on the Principles of Population" is the first most influential work relating to population growth and its consequences. In his book Malthus recognised and formulated a theory of inter-relationship between population and social change and economic resources.

The story of Malthus started with the conflicting views on population growth in the age of Enlightenment. Malthus was opposed to the idea of encouraging population growth. He thought that the relationship between population growth and resources was not linear. In the stage of population growth, there is a point where a number of imbalances occur. Malthus thought such state of imbalance occurs because of desire of human beings to

multiply.

Malthus observed that population tended to grow more rapidly than good resources do, a phenomenon that gave rise to tension between population and subsistence. Malthus argued that population tended to increase in GEOMETRICAL PROGRESSION (i.e. 2, 4, 16, 32..) doubling every 30 to 40 years; whereas the output of food increases at an ARITHMETICAL PROGRESSION, (1,2,3,4,5...) For example, if the population of a country with 20 million people was doubling itself every 25 years and has enough food for 20 million, after 25 years, it would have 40 million people and enough food for 30 million. But after 50 years, the population would have increased to 80 million but the food supplies would only be enough for 40 million.

Malthus stated that the implication of such a lopsided relationship between the human population and food resources is that the human population will inevitably be forced to live at subsistence levels. The capacity to improve food production might be increased with improvements in farming. Through this, the eventual fall in standard of living could be postponed, though it cannot be finally solved if population continues to increase at a faster rate than production.

Malthus later went to suggest the following possible checks:

- (a) Positive Checks: These are factors that will increase death rate and thus limit the rate of population growth. In this category are poverty, disease, epidemic, war, famine e.t.c. The occurrence of any of these will increase human loss of population. Many would die and the vitality of those living will reduce.
- (b) Preventive Checks: These are factors that will reduce birth rate. In this category are abstinence, contraception and abortion. This category of checks appear to be evil and unacceptable to many especially the religious ones.
- (c) Moral Restraint: This, according to Malthus, is the only acceptable means of preventing increased birth rate. This will imply delayed marriage, and well spaced births, which implies that marriages will not be contracted until the man is able to support a viable family. Malthus viewed moral restraints as very important because, he is of the view that if people were allowed to prevent births by what he called improper means then they would waste their energies on economically unproductive activities.

Another of Malthus' argument is that rapid population growth would lead to poverty. He believed that there is a natural law

of population growth in which increased food resources would lead to too many people for available resources and this would eventually lead to poverty.

Malthus suggested that educated and rational persons should be able to anticipate the effects of marrying quite early and having children which cannot be cared for adequately. As a result, marriage and sexual intercourse should be postponed so that the ugly incidence of object poverty can be avoided.

Some Criticisms of Malthus Theory

Although, the Malthusian theory provides a simple, and in many respects, an attractive theory of the relationship between population growth and available resources to sustain human existence, it is unfortunately based on a number of simplistic assumptions and hypotheses that do not stand the test of empirical verification. Consequently, the following criticisms were levied against it.

First, theory as proposed by Malthus, constantly confused moralistic and scientific thinking. As a scientific theory it fails to establish a base for testability.

Secondly, Malthus does not take into account the importance impact of technology and discoveries in solving the problems of

rapid population growth. Technological development which leads to improved agricultural methods such as the use of fertilizer and new types of breeds of livestock have increased productivity.

Thirdly, Malthus was basically correct in assuming land as being in limited supply. He, however, did not anticipate the benefits from improved transportation and combined with the opening up of new agricultural lands in the 'new world'

Fourthly, Malthus assumed that population growth is directly related to the rise in the level of income (wage increase). But in many Third World Countries, population in fact has increased without any rise in income levels.

As a result of the use of modern medicine and public health programmes, death rates have fallen sharply while birth rates have risen.

Fifthly, Malthus did not envisage "the control of fertility" within marriage. He was of the view that once a couple got married they will procreate and increase the population. But as far back as the late 18th century birth control was being advocated for married couples in many countries.

Merits of Malthus Theory

Despite Malthus warning, economic progress has begun to slow

down and population has continued to rise. The changes Malthus failed to forecast did not refute his argument but merely postponed the inevitable.

Two, today, the world is facing some harsh ecological facts. Man is pressing hard on his environment and the imbalance between the world population and material resources is becoming greater. Social and economic problem which Malthus envisaged are now becoming quite evident.

Thirdly, Malthus was the first to call attention to population growth as a major source of human suffering. Though his critics thought that he was reactionary and that as a religious priest, his comments were regarded as blasphemous against God, because he called on people to take full responsibility of the number of children they produced, yet his postulates are becoming factual.

Fourthly, Malthus helped to collect ideas about population. These ideas were fragmentary up till now, however, nevertheless, the ideas provided a more organised framework for studying population and its problems. His ideas have led to a greater and deeper study and debate on the nature and problems of population levels and trends.

Furthermore, the greater demand for precision, quantification and prediction in recent times have not found Malthus theory wanting for any scientific study.

UNIVERSITY OF IBADAN LIBRARY

APPENDIX V

SOCIAL STUDIES IMMEDIATE RECALL TEST (SSIRT) I

Name:..... Combination:.....

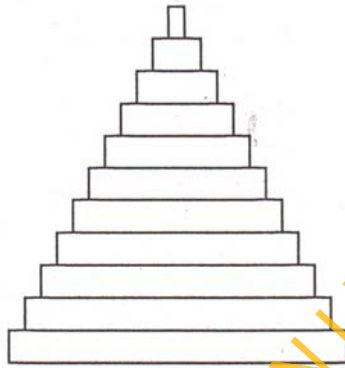
Institution:.....

INSTRUCTIONS

- (i) Choose the most appropriate alternative from the options A to D given for each item.
- (ii) Shade as appropriate in the answer sheet provided.
- (iii) Attempt all questions.
1. What is population?
 - A. It is the number of inhabitants of a country.
 - B. It is the quantity and quality of the inhabitants in a defined area.
 - C. It is the total number of men and women in a country.
 - D. All the children living in a country.
 2. To plan effectively for development in any country there is a need to know the
 - A. fund available for use in the country.
 - B. number of people in the country.
 - C. quantity and quality of the population in the country.
 - D. number of workers in the country.
 3. What is crude increase in population? It is the

- A. number of additional births.
 - B. difference between the number of births and the number of deaths.
 - C. fall in death rate in a country.
 - D. number of increased employment.
4. Which of the following is NOT a course of population growth?
- A. Increase in the birth rate.
 - B. Fall in the death rate.
 - C. Increase in the wealth of the state.
 - D. Migration into the state.
5. Why is the knowledge of the age-sex structure of population important in planning for a country? It
- A. enables us to know how old the people is.
 - B. reflects quality of the population.
 - C. affords planners the knowledge of how to plan for the country.
 - D. allows for adequate planning for all levels of the population.

Fig. I

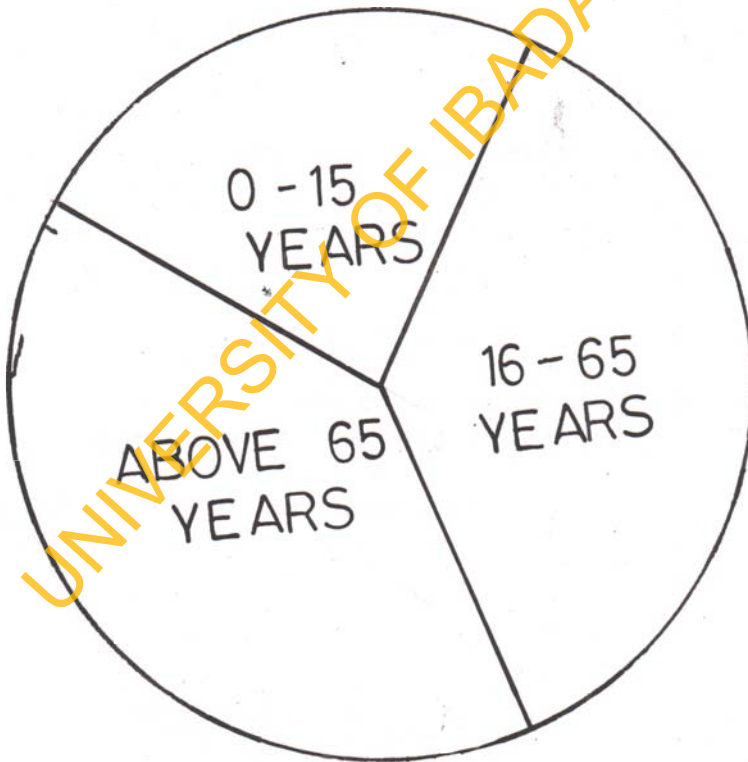


6. The diagram in figure 1 depicts a population with structure.
- progressive
 - regressive
 - matured
 - stationary
7. The characteristics of a population structure is normally represented by a population
- chart
 - cone
 - pyramid
 - pie Graph
8. What is the dependency ratio in a population which has 2,000 children, 8,000 adults and 1,000 aged people?

A. 2:3 B. 3:8 C. 1:5 D. 10:1

9. When there is greater population in a given area of land than actual or potential resources can support ... sets in
- A. optimum population
 - B. underpopulation
 - C. overpopulation
 - D. regressive population

Fig. 2 Population distribution in town Z.



10. The diagram in Fig. 1. represents the distribution of population according to age groups. The town has _____
- low dependency ratio.
 - high dependency ratio.
 - static population structure.
 - regressive population structure.

SOCIAL STUDIES IMMEDIATE RECALL TEST II

Name :

Combination :

Institution :

INSTRUCTION:

- Choose the most appropriate alternative from the options A to D given for each item.
 - Shade as appropriate in the answer sheet provided.
 - Attempt all questions.
- The most important factor which accounts for the distribution of population over the land masses is
 - relief and accessibility
 - economic potentialities
 - water supply
 - historical factor
 - The attraction of some areas to seasonal labour migrants is usually based on their
 - more highly developed culture

- B. better economic opportunities
 - C. better social amenities
 - D. highly developed transport and communication
3. There are few cities with more than a million (1,000,000) people in Africa because
- A. African population is mainly nomadic
 - B. The population of the continent is low and industries are few.
 - C. There is no capital to develop the towns
 - D. The rate of migration from rural to urban areas is not very high.
4. Which of the following statements about population distribution in Nigeria is UNTRUE.
- A. Area of fertile soils are thickly populated
 - B. Mangrove swamps carry thick population
 - C. Industrial areas have dense population
 - D. Population tends to concentrate in cash crop producing areas
5. Which of the following factors DOES NOT generally explain population concentration?
- A. Fertile soils
 - B. Availability of industries
 - C. Availability of educational facilities
 - D. The type of vegetation

6. What is population density? It is the
- A. number of people living in a country
 - B. relationship between population and productivity of a unit of land.
 - C. expression of the ratio between population and a given unit of land.
 - D. ratio between total population and the inhabited unit of land.
7. Which of the following historical factors influenced population distribution that resulted in emigration from Africa?
- A. Apartheid
 - B. Intertribal wars
 - C. Slave trade
 - D. Resettlement schemes
8. The population of a country is NEITHER increased NOR decreased by one of the followings. Which is it?
- A. Seasonal migration
 - B. Emigration
 - C. Immigration
 - D. Increased fertility
9. To reduce population concentration in the urban areas of Nigeria, the government should
- A. improve transportation system

- B. establish more industries in the towns
- C. provide social amenities and employment in the rural areas
- D. reduce the birth rate of the urban dwellers
10. The following forms of immigration are voluntary movements of people EXCEPT
- A. attending a higher institution in another city
- B. taking up employment in the urban area
- C. leaving the urban areas for the country-side during old age
- D. the trans-atlantic slave trade of the 18th and 19th centuries.

SOCIAL STUDIES IMMEDIATE RECALL TEST III

Name : Combination :

Institution :

INSTRUCTIONS:

- (i) Choose the most appropriate alternative from the options A to D given for each item.
- (ii) Shade as appropriate in the answer sheet provided.
- (iii) Attempt all questions.

1. Who do countries conduct population censuses?
- A. To know how many people have died
- B. To know the number of people born in each town, or village

- C. To obtain information on the structure and distribution of population.
- D. To obtain information on the number of emigrants from the country.
2. Population censuses are normally conducted
- A. Every year
- B. Every two years
- C. Every five years
- D. Every ten years
3. Censuses which are conducted every ten years is know as
Censuses
- A. bi-annual B. de facto C. decennial
- D. none of the above
4. A census approach in which people are enumerated only when and where they are found adopts ... approach.
- A. Sight B. Dejure C. Defacto
- D. Residential
5. Nigeria had no population census in 1941 because of the
- A. Slave trade B. Inter tribal war
- C. World War II D. Civil War
6. A census sample survey is less accurate than full census because
- A. it may not cover all the population

- B. it cannot be generalized on the total population
- C. certain important element of the population may be left unenumerated.
- D. all the above points.
7. Why is enumeration undertaken at the same period during a census?
- A. To enable the enumerators finish counting quickly
- B. To avoid double counting of individuals
- C. To reduce the expenses on movement of enumerators
- D. To avoid the inflation of census figures by the enumerators.
8. Which of the following government agencies is responsible for conducting the 1991 census in Nigeria?
- A. National Commission on Education.
- B. Planned Parenthood Federation of Nigeria.
- C. National Republican Convention.
- D. National Population Commission
9. The population head-count in which only a small percentage of the entire population of a country is enumerated at a time is known as
- A. census B. vital registration
- C. migration statistics D. sample survey
10. The personnel that does the actual counting and recording of population census information is known as
- A. facilitator B. supervisor

C. enumerator

D. calculator

SOCIAL STUDIES IMMEDIATE RECALL TEST IV

Name:.....

Combination:.....

Institution.....

INSTRUCTIONS:

(i) Choose the most appropriate alternative from the options

A to D given for each item.

(ii) Shade as appropriate in the answer sheet provided.

(iii) Attempt all questions.

1. Which of the following is the most appropriate indication of the term overpopulation?
 - A. Too many people for actual or potential resources.
 - B. Low productivity because of low level of technology
 - C. Many people living in a small land area
 - D. Too few people to fully exploit the resources.

2. Why does Nigeria adopt the antinatalist rather than the pronatalist population policy? It is to
 - A. increase the number of people in the country.
 - B. reduce the death rate in the population of the country
 - C. reduce the rate of population growth in the country
 - D. accelerate the rate of economic development in the country

3. Which of the following countries adopts pronatalist population policy?
- A. Ghana B. Egypt C. Kenya D. Gabon
4. Which of the following factors DOES NOT militate against antinatalist population policy in Nigeria?
- A. Religious factor B. Ethnic factor
C. Political factor D. Social factor
5. Objectives of the Planned Parenthood Federation of Nigeria (PPFN) are the following EXCEPT:
- A. Encouraging the building of healthy happy families through proper spacing of children.
B. Educating women about unwanted pregnancies.
C. Helping parents to understand the value of having only those children they can care for.
D. Controlling the distribution of population in the country.
6. To reduce the rapid growth of population in Nigeria, the Federal Government has come out with a policy that says each...
- A. man should marry not more than 4 wives.
B. man should have only one wife.
C. woman should give birth to only 4 children.
D. women should give birth to only 1 child.
7. A long run or permanent solution to over population in Nigeria is

- A. migration from rural to urban areas.
- B. extension of cultivable areas of land.
- C. importation of basic food and materials.
- D. adequate birth control measures.

SOCIAL STUDIES IMMEDIATE RECALL TEST V

Name:.....
Institution:.....

Combination:.....

INSTRUCTIONS

- (i) Choose the most appropriate alternative from the options A to D given for each item.
 - (ii) Shade as appropriate in the answer sheet provided.
 - (iii) Attempt all questions.
1. Too many people settling in a small agricultural area creates a situation of
 - A. high population pressure
 - B. high Agricultural productivity
 - C. low man-land ration
 - D. soil Improvement
 2. An advantage of large population in a country is
 - A. large urban concentration
 - B. improved transport and communication

- C. expansion of domestic market
 - D. large production of essential commodities
3. A country with a small population size will experience the following EXCEPT
- A. immigration and emigration of people
 - B. low international prestige
 - C. maximum exploitation of natural resources
 - D. high man-land ratio
4. In a small country with large population, which of the following characteristics will NOT exist?
- A. Low population density
 - B. High man-land ratio
 - C. High urban concentration
 - D. Large domestic market
5. United States of America (U.S.A.) has a larger population than any African country yet she does not experience high pressure on her natural resources because it
- A. is populated by the Whites
 - B. has larger land area than the African countries
 - C. has more natural resources than the African countries
 - D. has better technology for resource exploitation than the African countries.

4. Rapid population growth results from
- A. Low marriage age
 - B. High fertility rate
 - C. Reduced spacing of pregnancies
 - D. All the above
5. Malthus argued that while population increase, geometrically, (2, 4, 8, 16 etc) food supply increases
- A. graphically
 - B. arithmetically
 - C. astronomically
 - D. economically
6. In the developing countries, there is general fall in per-capital income because
- A. famine has destroyed much of the agricultural
 - B. there are not enough people to fully tap the natural resources.
 - C. industries have not been established to process the agricultural products.
 - D. much pressure on land has led to diminishing returns on agriculture.
7. The degree to which the unproductive group depend on the productive group in the population is known as
- A. interaction ratio
 - B. dependency ratio
 - C. productivity index
 - D. unemployment index
8. Which of the following is a criticism of Malthus theory on population and resources. Malthus
- A. was not a scientist, so he could not propound a theory

- B. did not consider the effect of scientific discoveries
- C. was the son of a clergyman
- D. did not have enough facts for his theory.

UNIVERSITY OF IBADAN LIBRARY

APPENDIX VI

SOCIAL STUDIES DELAYED RECALL TEST (SSDRT)

INSTRUCTIONS:

- (i) Read carefully through each test item
 - (ii) Choose the most appropriate alternative from the options A to D given for each item.
 - (iii) Shade as appropriate in the answer sheet provided.
 - (iv) Attempt all question. Each item carries a whole mark.
1. What is population density? It is the
 - A. Ratio between total population and the inhabited unit of land.
 - B. Number of people living in a country.
 - C. Relationship between population and a given unit of land.
 - D. Expression of the ratio between population and a given unit.
 2. To plan effectively for development in any country there is a need to know the ...
 - A. fund available for use in the country
 - B. number of workers in the country
 - C. quantity and quality of the population in the country
 - D. number of people in the country.
 3. Why do countries conduct population censuses?

are enumerated only when where they are found?

- A. Residential
- B. Defacto
- C. Dejure
- D. Sight

8. Which of the followings is the most appropriate indication of the term overpopulation.

- A. Low productivity because of low level of technology
- B. Many people living in a small land area
- C. Too few people to fully exploit the resources
- D. Too many people for actual and potential resources

9. Why does Nigeria adopt the antinatalist rather than pronatalist population policy? It is to

- A. Increase the number of people in the country
- B. Reduce in rate of population growth in the country
- C. Increase the number of people in the country
- D. Accelerate the rate of economic development in the country

10. Too many people settling in a small agricultural area creates a situation of

- A. Soil improvement
- B. Low man-land ratio
- C. High agricultural productivity
- D. High population pressure

11. An advantage of large population in a country is

structure.

- A. progressive B. regressive C. matured
D. stationary



Fig. 1

16. Malthus argued that while population increases, geometrically (2, 4, 8, 16 e.t.c.) food supply increases
- A. graphically B. arithmetically
C. economically D. astronomically
17. The most important factor which accounts for the distribution of population over the land surface is
- A. historical
B. water supply
C. better economic opportunities
D. relief and accessibility
18. The attraction of some areas to seasonal labour migrates is usually based on their

- A. immigration and emigration of people
- B. low international prestige
- C. maximum exploitation of natural resources
- D. high man-land ratio
24. The personnel that does the actual counting and recording of population census information is known as
- A. Facilitator B. Supervisor
- C. Enumerator D. Calculator
25. The degree to which the unproductive group depend on the productive group in the population is know as
- A. productivity index
- B. unemployment index
- C. interaction ratio
- D. dependency ratio
26. Which of the following is a criticism of Malthus theory on population and resources? Malthus
- A. Was the son of a Clergyman
- B. Was not a scientist, so he could not propound a theory
- C. Did not consider the effect
27. Which of the following is NOT a cause of population growth?
- A. Increase in the birth rate
- B. Fall in the death rate

- C. Increase in the wealth of the state
- D. Migration into the state
28. Why is the knowledge of the age-sex structure of population important in planning for a country. It
- A. enables us to know how old the population is
- B. reflects quality of the population
- C. affords planners the knowledge of how to plan for the country.
- D. allows for adequate planning for all levels of the population.
29. What is the dependency ratio in a population which has 2,000 children, 8,000 adults and 1,000 aged people?
- A. 1:5 B. 10:1 C. 3:8 D. 2:3
30. There are few cities with more than a million (1,000,000) people in Africa because
- A. african population is mainly nomadic
- B. there is no capital to develop the towns
- C. the population of the continent is low and industries are few.
- D. the rate of migration from rural to urban areas is not high
31. The population of a country is NEITHER increased NOR decreased by one of the following factors. This is it?
- A. Seasonal migration

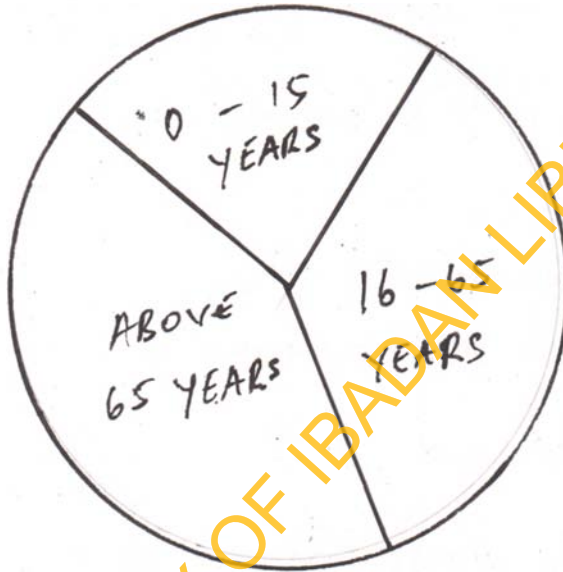
- B. Emigration
- C. Immigration
- D. Increased fertility
32. To reduce population concentration in the urban areas of Nigeria, the government should
- A. reduce the birth rate of the urban dwellers
- B. provide social amenities and employment in the rural areas
- C. establish more industries in the towns
- D. improve transport and communication systems
33. Which of the following government agencies is responsible for conducting the 1991 census in Nigeria?
- A. National Commission on Education
- B. National Population Commission
- C. National Republican Convention
- D. Planned Parenthood Federation of Nigeria
34. The population head-count in which only a small percentage of the entire population of a country is enumerated at a time is known as
- A. vital registration
- B. sample survey
- C. census
- D. migration statistics
35. Objectives of the Planned Parenthood Federation of Nigeria (PPFN) are the following EXCEPT

- C. encouraging the building of healthy happy families through proper spacing of children.
- D. helping parents to understand the value of having only those children they can care for.
36. To reduce the rapid growth of population in Nigeria the Federal Government has come out with a policy that each
- A. man should marry not more than 4 wives
- B. woman should give birth to only one child
- C. man should have only one wife
- D. women should give birth to only 4 children
37. In small country with large population, which of the following characteristics will NOT exist?
- A. High man-land ratio
- B. Low population density
- C. High urban concentration
- D. Large domestic market
38. United States of America (USA) has a larger population than any African country, yet she does not experience high pressure on her natural resources, because it
- A. has more natural resources than the African countries
- B. is populated by the Whites
- C. has better technology for resources exploitation than the African countries
- D. has larger land area than the African countries

39. The best check which man would apply to bring down the rate to population growth is
- A. preventive check B. negative check
C. positive check D. moral restraint
40. Rapid population growth results from
- A. low marriage age
B. high fertility rate
C. reduced spacing of pregnancies
D. all the above
41. The characteristics of a population structure is normally represented by a population -----
- A. cone B. chart
C. Pie graph D. Pyramid
42. When there is greater population in a given area of land than actual or potential resources can support ____ sets in
- A. optimum population
B. overpopulation
C. regressive population
D. underpopulation

43.

Fig. 2: Population distribution in town Z.



The diagram in Fig. 2. represents the distribution of population according to age groups. The town has _____

- A. static population structure
 - B. low dependency ratio
 - C. high dependency ratio
 - D. regressive population structure
44. In the developing countries, there is general fall in per capital income because
- A. much pressure on land had led to diminishing returns in agriculture

- A. Resettlement schemes
 - B. Apartheid
 - C. Slave trade
 - D. Intertribal wars
49. The following forms of migration are voluntary movements of people EXCEPT
- A. attending a higher institution in another city.
 - B. leaving the urban areas for the country-side during old age.
 - C. the trans-atlantic slave trade of the 18th and 19th centuries.
 - D. taking up employment in the urban areas.
50. A long-run or permanent solution to over population in Nigeria is
- A. adequate birth control measures
 - B. migration from rural to urban areas
 - C. extension of cultivable areas of land
 - D. importation of basic food materials