AN EXAMINATION OF POLICY AND PRACTICE IN GHANAIAN EDUCATION, WITH SPECIAL REFERENCE TO THE JUNIOR SECONDARY SCHOOL REFORM

George M. Osei

Thesis submitted to the University of Oxford for the degree of DPhil

Mansfield College Michaelmas Term, 2017

ABSTRACT

An examination of policy and practice in Ghanaian education, with special reference to the junior secondary school reform

George M. Osei **DPhil**
Mansfield College **Michaelmas Term 2017**

This thesis will investigate the introduction of a new innovative secondary education system in Ghana during its formation since 1974 and inception from 1987 to 2017.

The innovation was designed as a complex package offering an integrated approach to change educational values, orientation and learning outcomes. The changes subsumed in each aspect of the innovation have far-reaching implications for the entire education system. One element, the vocationalised curriculum, caused immediate concern at the time of implementation because of pre-existing evidence of similar attempts made previously in Ghana and other countries which yielded unsatisfactory results. This concern was increased by the complexity of subsequent changes in the examination system and in the new structure of Junior Secondary Schooling (JSS). Furthermore, there were mixed opinions regarding a new emphasis on the individual learner as the focus of school activities augmented by the introduction of continuous assessment and guidance and counselling.

The primary aim of the research was to monitor the implementation processes in as many aspects as possible. This was done in order to see what benefits might be gained, and what lessons in order to continue the innovation. In order to conduct the assessment it was necessary to examine critically the characteristics of each element of the reform and their implications, using a variety of research methods to generate relevant data. This approach yielded a substantial amount of original evidence on the dynamics of educational change. While this evaluation specifically helps to deepen understanding of the said innovation, it also makes a contribution to the literature on educational innovation in developing countries. The particular theoretical framework used to direct analysis of the processes is derived from the IAC evaluation model developed by Havelock and Huberman (1977) and is used in their study of educational innovations in the developing countries. The theory proposes that a large and complex problem requires a sophisticated level of competency to handle it. An innovative situation requires an efficient system in order to muster the relevant level of IAC factors as were required. This thesis explores and extends the IAC model by incorporating the new research regarding the Ghanaian educational innovation. In this new dimension, the Ghanaian model has tended to display far more interactive and cohesive characteristics than in the original Havelock and Huberman study, thus making the measure for success relatively more complex. There is overwhelming evidence to show that by the end of its second cycle in January 2000, none of the JSS innovation components had been in any way implemented. In all aspects, the level of systemic competency was far below what was demanded by the innovation. When placed in the framework of the IAC theoretical model, analysis of the conclusive empirical findings provides key recommendations for future innovative educational projects. Crucial coordinating factors must be considered and necessarily established to ensure that strategies are put in place which strengthen the infrastructure. This coordinating initiative should encompass internal and external logistics coordination for resource persons and materials, while simultaneously linking the organisational management of the project with key administrative, political, and social interest groups.

ACKNOWLEDGEMENTS

My grateful thanks go to several groups and individuals without whose contributions this research would have been impossible.

I wish to record especially my gratitude to Professor Geoffrey Walford for his critical input into the questionnaires and the methodology.

For the ungrudging co-operation which facilitated my field-work in Ghana I thank the headteachers, teachers and students in all the schools involved in the study; the officials of Ghana Education Service and Ministry of Education and numerous people who spared their precious time to be interviewed.

My special thanks go to the Department of Educational Studies and Centre for Comparative Studies in Education, Oxford University for generously footing the round trip Air fare from UK to Ghana during the fourth visit.

All through the programme Professor David Johnson and Dr Colin Brock remained my mentors, continuously inspiring and challenging. Their unflagging enthusiasm stretched and spurred on my efforts. I am privileged and grateful to have been supervised by them.

Thank you also to my research assistant: John Awuni, and also all my course mates and friends for their support and encouragement: Sherrill Conroy, Franklin Smith, Rob Berkeley and Julie McGonigle.

My thanks are also due to the staff of various libraries, which I used, especially the staff of Balme library, University of Ghana as well as Cape Coast University and the University of Education at Winneba & Kumasi Campus.

All the limitations of the thesis are, of course, entirely my responsibility.

TABLE OF CONTENTS

Abstract.....i
Acknowledgements.....ii
Table of Contents.....iii
List of Figures.....vi
Acronyms and Abbreviations.....ix
Introduction.....1

PART A: CONTEXT

Chapter One: Legacies and Context in Ghanaian Education up to 1974

Introduction……...28
Traditional African Education.....29
Islamic Education.....36
Christian Mission Education.....41
British Colonialism……...44
Colonial Government and Education……47
The Emerging Ghanaian System.....53
Education at Independence……....58
Self-Government and Education.....65
The 1974 Education Reform.....70
The Junior Secondary School as a Neo-Colonial Legacy…….73
The Interface between Indigenous and-
Colonial Attitudes to Education……74
Goals of the 1987 Reform……75
Components of the 1987 Reform……77

Chapter Two: A Review of Contemporary Ghanaian Education

Economic and Social Overview……80
The Contemporary Context for Educational Development.....81
Poverty in Northern Ghana……...84
The Education System.....88

The Current Education Situation……..94
The FCUBE Programme.....95
Special Needs Education……...97
Assessment and Examination Policies……..99
Teachers.....102
Summary of the Situation.....106

Chapter Three: The Post 1987 Reform with Special Reference to the Junior Secondary School

Introduction…….109
The 2002 Presidential Committee on Review-
of Education Reform……...110
Background and Reform.....112
Structural Reform…….113
Decentralisation of Education Administration.....119
Leadership, Consultation, and Participation-
During Implementation.....126
Outcomes of the 1987 Education Reforms.....128
Technical and Vocational Education and Training.....133
Science and Technology Education.....138
The Education of Girls.....146
Teacher Education…….150
Current Education Situation……..153
Funding the Education Reforms.....153
The Role of Private Sector in Education.....159
Dissenting Views of the 1987 Reforms.....161

PART B ANALYSIS

Chapter Four: Issues and Methodology

Introduction……167
Hypotheses and Research Questions……..167
Evaluation.....172
Elaboration of the Authority (A) Factor…….174

Elaboration of the Consensus (C) Factor 175
Research Questions……...176
Research Methods…….177
Questionnaires……..179
Phase I Case Studies September 1999 - January 2000……..183
Phase II Case Study: October 2014 – January 2015…… 186
Issues…….187
Documentary Research……..189
Empirical Research……198
Case Studies……..199
Generalizability……203
Ethical Issues.....204
Data Analysis……205
Limitations of Methods…….205

Chapter Five: Analysis: General Issues

An Overview of Issues.....208
Economic Aspects: Job Aspiration and-
Curriculum Choice of Clients……209
Innovation Management……212
Conceptual Issues and the JSS Reform.....214
Conceptualisation at the National System Level……215
Conceptualisation at the Regional Subsystem Level…….217
The Management of Implementation of the JSS Reform.....220
Communication at National Level…….220
Emergent Issues from the Communication Data……224
Parent Teacher Association Unions and the Community……...226
Curriculum Implementation Data:-
Adoption Activities…….226
Funding……...227
Issues of Accommodation……...228
Equipment Provision.....230
Teacher Provision.....233
School Based Data on Conceptualisation.....237

Chapter Six: Analysis of Case Studies

Introduction……....240
Curriculum Materials (Work Schemes and Lesson Notes)……240
Curriculum Materials (Text Books) ……..242
Equipment Supply ……243
Communication Management in the Classroom……246
Comparisons of Responses on Conceptualisation of the JSS-
Vocational Curriculum ……250
Conceptualisation of Continuous Assessment ……252
Characteristics, Attitudes and Values of Teachers-
in Junior Secondary Schools.....260
Teachers' views on Curriculum and Employment.....264
Teachers' views on JSS Reform and its Implementation.....269
Structural Characteristics, Attitudes and-
Perceptions of JSS Students.....272
Pupils' views on the JSS Curriculum.....278

Chapter Seven: The JSS Innovation: Perceptions-
and Research Findings

General Perceptions……....285
The CDC: Conceptual Evolution
The Modern Aids to Education Centre (MAEC) 1974-1986……...289
The CDC: New Concept 1986- ……291
Operationalisation of the CDC
The CDC Structure……....293
I A & C Factors at the National Level-
Under Military Leadership……299
Under Civilian Political Leadership 1992 –
Power Structure under the Civilian Government……299
The NCE, JCC and the JCC Reference Committees……307
Implementation Committee……308
Summary of Findings……311
Inadequate Organisational Structures……311

Inadequate Staffing……312
Insufficient Implementation……...312
Discussion of Research Findings……...313
Conclusions and Recommendations.....329
Recommendations…….339
Bibliography……..347
Appendices.....373

LIST OF FIGURES

1.1 Government and Assisted Schools in Ghana-
(Gold Coast) 1925-27.....50

1.2 Government and Assisted Schools Enrolment-
Grants 1925-27.....50

1.3 Enrolment at Teacher Training Colleges in 1927.....50

1.4 Ghana Evolution of the Structure of Education
from Colonial Times up to 1950.....55

2.1 Ghana's Administrative Regions.....86

2.2 Terminology used to refer to levels of education
in Ghana.....86

2.3 *2014-2015* Academic calendar for Ghana Primary-
School and JSS.....89

2.4 Ghana: Structure of the Formal Education System.....92

2.5 Teacher ranking within the Ghana Education-
Service (GES).....104

2.6 Percentage of Trained Teachers in Primary
Schools (National and Regional Figures).....105

2.7 Teacher Numbers in Junior Secondary Schools.....105

3.1 Deputy Directors' Line Management.....120

3.2 Proposed Organogram for the District-
Education Office.....124

3.3 Enrolment of SSS of Final Year Students in Science-
and Technology Programmes by Year and Gender.....142

3.4 Percentage Passes in Science and Technology Subjects-

At SSSCE: Core Science-Based Subjects.....144

3.5 Percentage Passes in Science and Technology Subjects-
At SSSCE: Elective bases Science Subjects.....144

3.6 Enrolment in Primary Schools in Ghana
(1986/87-1995/96).....148

3.7 Enrolment in Junior Secondary/Middle Schools in Ghana
(1986/87-1995/96).....149

3.8 Enrolment in Senior Secondary Schools in Ghana
(1986/87-1995/96).....149

3.9 Donor/ Support for Education Reforms in Ghana.....156

6.1 Introductory Technology Lesson at Achimota JSS.....248

6.2 Introductory Technology Lesson at Sisala JSS.....249

6.3 Comparison of Responses on Conceptualisation of the JSS

Vocational Curriculum …….251

6.4 Responses on Conceptualisation of-

Continuous Assessment ……...260

6.5 Teachers'- Views on Curriculum and Employment.....265

6.6 Teachers'- views on the Role of the JSS Teacher.....266

6.7 Representation of JSS Pupils interviewed.....273

6.8 Representation by Sex in JS Schools.....273

6.9 Pupils'- Views on Curriculum.....278

Acronyms and Abbreviations

ADB	African Development Bank
ADPE	Accelerated Development Plan for Education This programme was started in 1951 with the aim of providing educational facilities for all children of school-going age
BECE	Basic Education Certificate Examination (leaving Certificate From the Ghanaian Junior Secondary School)
CA	Continuous Assessment
CHASS	Conference of Headmasters of Assisted Secondary Schools
CPP	Convention Peoples' Party (This party won the elections meant for the first nationalist government in Ghana in 1951. The party was led by Dr Kwame Nkrumah. It was under this Political party that Ghana attained independence in 1957)
CRDD	Curriculum Research and Development Division - A Department under Ministry of Education responsible for formulating curricula for pre-university institutions
CRIQPEG	Centre for Research on Improving Quality of Primary Education in Ghana
CRT	Criterion Referenced Test
DA	District Assembly
EDSAC 1&2	First and Second Education Sector Adjustment Credits (World Bank)
ERP I & II	Economic Recovery Programme, Phases 1 & 2
ERP	Education Reform Programme
ERRC	Education Reforms Review Committee
FCUBE	Free Compulsory Universal Basic Education
GDP	Gross Domestic Product - An economic term
GER	Gross Enrolment Rate (Proportion of the total school-going population, irrespective of age, enrolled in a specific level of schooling)

GES	Ghana Education Service
GIS	Ghana Information Services
GLSS	Ghana Living Standards Survey
GNAT	Ghana National Association of Teachers (teachers' union)
GOG	Government of Ghana
GP	Government Printer
IMF	International Monetary Fund
JHS	Junior High School
JSS	Junior Secondary School
MOE	Ministry of Education (Ghana)
MSLC	Middle School Leaving Certificate (An Educational qualification obtained at the first ten years of schooling in Ghana)
NVTI	National Vocational Training Institute
PE	Physical Education
PTA	Parent Teacher Association
SAP	Structural Adjustment Programme
SHS	Senior High School
SMC	School Management Committee
SSS	Senior Secondary School
SSCE	Senior Secondary Certificate Examination
TTC	Teacher Training College
UPE	Universal Primary Education
WAEC	West African Examinations Council
WB	World Bank

Introduction

Since Independence, several attempts have been made to reform the educational system inherited from the colonial era. One can readily recall the reform introduced in the 1974 which ushered in the Junior Secondary School on an experimental basis. The reform introduced the JSS and SSS structure of education to replace the "O" and "A" levels which Ghana inherited from colonial rule (MOE, 1974; GOG, 2004). However, the first post-Colonial Education Reform Programme came into effect in 1987. This reform introduced for the first time fundamental structural changes that sought to make the curriculum relevant to the manpower requirements for a developing country like Ghana (Daaku, 1996; Little, 2010)

The Purpose of Study

The purpose of study is to examine historically the impact of educational reforms on the outcomes of the education system in Ghana. The trajectory of historical comparative policy analysis (Johnson, 2006), will be very helpful in this thesis of educational reforms in Ghana from 1987 to 2017. The review of the historical context can assist a deeper understanding of why certain, seemingly "new" ideas are emphasized in contemporary education. Not many African countries have thoroughly reflected on the history of their educational reforms. In some cases, detailed documentation of the history of education is unavailable. Historical studies of education can fill up the missing accounts of connections between developments in schooling with broader socio-political development in the society (Sweeting, 2014, p. 179).

The focus of the study is the educational reforms of 1974 to 1987 in Ghana. It is in this period that Ghana developed an educational policy, which placed a huge responsibility for all

aspects of national development – political, cultural, social, economic and technological – on education, 'the greatest instrument of change' as it was termed in the official policy document, the National Policy on Education (NPE) of 1987. The new policy aimed to bring radical qualitative improvement in the educational system by integrating schools with outside world. It also provided for massive growth in enrolment numbers of students. Far-reaching changes were planned at the secondary school level as one of the main strategies for achieving the identified objectives. The Junior Secondary School (JSS) reform launched in September 1987 is the first stage of this radical reform of secondary education and it is on this development that this thesis focuses.

The JSS reform is a package of wide-ranging proposals with several inter-related elements. There are three main components to the innovation. These are:

(i) **the Junior Secondary School (JSS) structure** which provides for three-year terminal secondary school for the majority.

(ii) **a vocational curriculum** which provides for a compulsory pre-vocational exposure as part of general education; i.e. an activity-oriented curriculum geared to integrating school and the world of work.

(iii) **a guidance and counselling component,** which places a new emphasis on the child as the centre of learning. It tries to co-ordinate the objectives of teaching methods and assessment strategies of the innovation components.

Of course, the following three main concerns prompted this important study:

(i) **the need to gain more knowledge about educational innovation processes in developing countries**. Although many countries have embarked on educational innovations remarkably few studies have been undertaken to carry out in-depth examination of the processes employed. Frequently all that are available are reports turned in by government

administrators or officials who are anxious to create a good impression. This study therefore has been directed at undertaking an in-depth analysis of an educational change process in Ghana with the hope not only of identifying weaknesses where they exist, but also determining the causes and nature of problems in vocationalisation and suggesting possible solutions.

(ii) **a concern to explore the reasons for the high mortality rate of vocationalisation** Existing literature on vocational education paints a dismal picture of practices in the field with abundant evidence of widespread failure rates among projects. Governments, especially in the developing countries, have continued in their efforts to institutionalise vocational education in one form or the other despite this. This is true in Ghana as elsewhere in the developing world and it is therefore a matter of concern to this researcher.

(iii) **a need to understand the radical nature of the new assessment methods and their impact on the system**. The proposed continuous assessment represents a controversial new departure from traditional examination practice. The changes logically implied by this system have far-reaching implications.

(iv) **a special interest in the role of the Curriculum Development Centre** in supporting the innovation.

The scale and complexity of the innovation package with the range of new behaviours implied in terms of assumptions, skills, resources and procedures stimulated a special research interest in the development of the programme. The variety of actors involved and their influences on change directed attention to power and management issues. These research interests crystallised into research propositions in three broad areas, which drew on the work of Havelock and Huberman (1977). These are:

- the efficiency of infrastructural factors;

- authority influences;
- the degree of consensus among the different actors.

As will be evident in the study each of these issues raises a range of detailed questions appropriate with which to probe each particular element of the innovation.

Another interest area concerns the application of a suitable analytical framework for the examination of issues raised in the research. As already noted, there has been insufficient research into the processes of innovation management in the developing countries. This means that the basis for critical analysis is not yet adequately developed. This researcher was therefore interested in exploring the value of available theoretical perspectives and their further development.

Definition of Terms

In this thesis the following terms are used as defined below:

Policy – A course of action or principle adopted or proposed by a government or individual. Any course of action adopted as advantageous or expedient.

Practice –The action of doing something; performance; operation; method of action or working.

Ghanaian –A native or inhabitant of Ghana, a country on the coast of West Africa known until 1957 as the Gold Coast.

Junior Secondary School –A continuation school following primary school. The structure provides for a three-year terminal secondary school for the majority.

Reform –A conversion into another and better form. A change for the better.

Innovation –The introduction of a new thing; the alteration of something established. A change made in something; a new practice or method.

Originality of Research

The claim for originality in this research is justified in the following ways.

The method and quality of data generated

The monitoring approach adopted for this study provides a suitable opportunity for tracking the course of the innovation in all its phases as the research comes into direct confrontation with actors engaged in events as they occurred. Monitoring brings out the 'hot news' element of the change process: actors are in a position to remember exactly how they felt and what they thought about the innovation activities. The advantage of this approach is clearly brought out by Huberman:

> *''A very suspicious aspect of the literature on innovation is that much of it analyses changes that have already taken place ... We shall know more about the dynamics of change when we can control a given innovation from its genesis to its full adoption, rather than recreate it after the fact''* (Huberman, 1973 p.61)

The inadequacy of the dominant 'rear-guard' evaluation focus became clearer during the course of the study as the researcher encountered scepticism on several occasions, typical reactions being

> *''Isn't it too early?''*
> *''But there's nothing to evaluate.''*

It has been possible to amass a considerable amount of first hand empirical data from a variety of sources concerning several aspects of the innovation at a level of unusual detail. As far as the researcher is aware, this is not available in any previous study of contemporary educational change in Ghana. Studies have been undertaken on some aspects of the innovation in isolation but none has engaged in a comprehensive study of the entire innovation package. In the event this research highlights perceptions of the innovation as one large integrated enterprise rather than separate and unrelated parts, as the various components have previously tended to be regarded.

The combination of the teacher/researcher role has allowed access to the kind of data, which the well-known study by Havelock and Huberman (1977) on educational innovations in developing countries was unable to examine. The research subjects the data to detailed analysis beyond that undertaken by Adams and Chen (1981) in their study of educational innovations. Insights have been developed which are of both academic and administrative significance.

Development and Application of a New Theoretical Model

Most recent reports emerging on educational innovations in developing countries have been initiated as commissioned studies of specific projects by international donor agencies. Academic initiative from the developing countries themselves in this field of study has been very slow in building up though indications from an international conference on vocational education at the Institute of Education, London, in May 1986, showed the beginnings of encouraging responses from such countries. Even so, initiative from the developed countries has remained dominant. This would explain the dearth of relevant literature particularly with regard to theories dealing with educational innovation processes in developing countries. Some research efforts have been made to extend theories and findings from works carried out in developed countries to Third World contexts. One such major effort referred to earlier was carried out by Adams, R. S. and Chen, D. in 1981 in a comparative study of innovation projects drawn from seven developed and developing countries. The Adams and Chen study drew together administrators and researchers from all the projects in a dialogue from which evolved a model, which was used to examine the innovations. A major contribution of this approach is that they set out deliberately to:

> *''use research results to generate a kind of understanding that addresses the concerns of both planner and administrator''.*
> (Adams and Chen, 1981, p.258)

Important procedural lessons were highlighted by the twelve hypotheses generated from the study, which open up opportunities for further researches.

These authors however admitted to certain limitations one of which was the fact that the study had not included recommendations since many of the projects being considered had yet to reach that stage. Nevertheless the most important findings as they reported:

> *''... is that we have been led by our study to place such an emphasis on the interfaces between the 'innovation' and 'the system' and accordingly to regard the adaptive capacities of both as being perhaps the most critical aspect''* (ibid. p.278)

However, they derived their theory from general systems macro theory and acknowledged adopting the treatment of it in the work of Havelock and Huberman (1977) also mentioned above. While keeping in view the important contributions of Adams and Chen we should consider the excellent effort by Havelock and Huberman in which they worked out a general theory and evaluation model which they had applied to wide-ranging innovative situations in Third World projects that had reached or passed the implementation stage. The data they had to work on were unfortunately too scanty as they themselves acknowledged since they could not carry out any in-depth case studies. The fact, however, does not detract from the potential applicability of the tool they have developed for total understanding of the plethora of the interfaces inherent to innovation processes.

Nevertheless, this study claims originality in contributing a theoretical framework for the evaluation of educational innovations in the Third World by developing and extending the analytical model conceptualised by Havelock and Huberman and closely applying it to the Ghanaian context. Ideas from organisational management, particularly concepts elaborated by Handy (1976) have been incorporated so as to transform it into a potentially appropriate and powerful tool for evaluation in the Ghanaian situation. This effect has been achieved by emphasising the essential concepts of the systems theory of interdependence, integration,

connections and cohesion in examining the implementation of the innovation. Thus, whereas in existing literature there is a tendency to separate out different strategies of innovation processes, the model in use here draws together aspects of such strategies into one inter-dependent integrated approach. The model is able to link together system characteristics such as its level of developmental infrastructure, the political forces within the system authority and interactional forces at the grass roots, and to show how these in their interaction influence the course of the innovation.

Rationale for Research Perspective

Two factors influence the perspective that has been assumed in this research: (i) the organisational context to which the innovation is subject, and (ii) the nature of the innovation itself.

The Organisational Context

The principles used for interpreting and analysing the events have tried to reflect sensitivity to the circumstances of the social system under examination. The main theoretical thrust reflects the social context of Ghana and the manner in which its affairs are organised. The polity known as 'Ghana' is a social organisation with many interdependent sub-systems. The macro system at the national level maintains national interests while the regional micro-subsystems look after concerns at the subordinate system levels. The management arrangement is such that, although the regions are differentiated and enjoy relative autonomy, in reality, all planning, policy formulation, decision-making and resource management are centralised and controlled from the national macro-system. The national establishment therefore provides the dominant perspective from which all activities in all other sub-systems are controlled. One area in which such organisational perspective is demonstrated is education, as will be evident from the innovation being investigated here.

The Nature of Innovation

The nature of the innovation itself has exerted a contributory influence in the selection of a theoretical framework – the general systems theory. In all its complexity, the innovation is observed to replicate a similar tendency to multi-level differentiated parts which together are directed towards the common goals of the innovation. The primary reason therefore in selecting a theory to direct the research is that it should make it possible to illuminate understanding both of the innovation and the social context within which it is being implemented.

Theoretical Assumptions

The satisfaction of the needs of the organisation is the main focus of organisational activities, and this is done through the identification of those needs and their logical solutions. However, the organisational needs are not constant; they tend to alter from time to time. It is through this alteration in priorities that change is introduced in an otherwise stable condition. Practical solutions are then needed to solve the problems created by the emerging needs of the social organisation.

In a social system like Ghana, the specification of the taken-for-granted objective reality, of valid knowledge, is vested in the 'Establishment' at the macro system level represented by planners, decision-makers and government leadership at the national system level. All activities are channelled towards satisfying national needs through the coordination and integration of all efforts at regional levels to the achievement of a consensus.

Often, however, change is preceded by conflict in the system as system needs and priorities appear divergent from the goals pursued by system members. Whereas needs are rational attributes of the system, the goals are subjectively set by the system members who may harbour different priority perceptions (Etzioni, 1960; Silverman, 1970). Such dissonance

is considered an aberration and dysfunctional to the interest of the organisation. One means of overcoming this conflict is for the system to accommodate change by the introduction of 'practical solutions' to what are seen as 'practical problems'. A way to bring about change is by bringing in new ideas, i.e. innovation. The new ideas then would adjust the education subsystem towards the right national priorities in the current educational innovation in Ghana.

One, however, often observes that there is far more serious fundamental conflict between what is defined as valid knowledge to be taken for granted and the views held by actors in the subordinate subsystems because of the tendency of members to formulate their own meaning and act accordingly. The value position here derives from the interpretive paradigm, from which perspective the validity of the objective rational world of establishment is challenged while emphasis is laid on the meanings and interpretations created by the actors themselves.

The position taken in this study is encountered all the time in social organisations where set down rules are constantly infringed, for example, in the home, at school, in the law courts, in business, everywhere: people's actions are guided by their own values and perceptions of things. At school the educational implication of this is that the restraining system characteristics representing the 'establishment', such as structures, goals functions and objectives, are down played, while the perceptions of the learners, how they learn and their interpretations of this become the focus of learning transaction. Dewey and Bruner were influential in developing this approach to learning. In the Ghanaian context, this is a major frame of reference in the educational innovation as proposed.

From the point of view of this research it is apparent that each of these conceptual value positions can only be effectively applied to certain specific aspects of the study. The structural-functionalist paradigm is far better at explaining macro-system level phenomena; it

is inadequate for analysing the behaviours of individuals and subsystems at subordinate level. Hence, where it is necessary to explain formal policy as given, it becomes appropriate to use assumptions represented by the views of the policy-makers. On the other hand, the need is to explain why those policies do not work as expected, the interpretive paradigm is suitable for eliciting those assumptions held by individual actors. If the aim is to achieve consensus and stability, it becomes necessary to approach it through the means of negotiations such that by finding out what assumptions are held by individual actors, a strategy may be devised which will either adjust the actors' perceptions to the objectives of the policy-makers, or else get the policy-makers to re-set/adjust their objectives to fit the assumptions of actors.

The crux of the study therefore lies in locating whatever gaps/dissonances there may be and hopefully suggesting possible means of reaching a consensus. Furthermore, being aware of the inabilities of each of the two paradigms to sufficiently explain difficulties from both perspectives, the need to adopt a strategy that makes dialogue, consultation, effective communication and coordination and linkages, a central issue becomes critical. This becomes of great significance in analysing the innovation strategies and barriers as well as in examining the effectiveness of organisational structures that have been created to facilitate this innovation process. The relevance of the interaction between the structural -functionalist approach and the interpretive perception to the analysis of an organ like the CDC is thus highlighted.

It is from such a position that the researcher has found the general systems theory an appropriate framework against which to study the Ghanaian innovation in question. From this perspective an analytical model has been developed to further facilitate the investigations. Three main lines of enquiry flow from these assumptions and reflect the concerns of the Infrastructure/Authority/Consensus (IAC) model of Havelock and Huberman (1977) which focuses on the interaction between system characteristics, system members and the innovation

components. One of these is concerned with establishing the capacity of the system to support the innovation process to the required level of completion. A second focus is on the quality of interaction among different decision-making authorities in the system whose actions exert direct influences on the innovation. The third approach investigates the degree of consensus that exists among all actors in order to support implementation.

Theoretical Frame Work

The theoretical framing of the study draws broadly on work in the political economy of education systems in developing countries (Kingdon et al, 2014). Kingdon's piece can be argued that Havelock and Huberman's (1977) general systems theory was a forerunner of the political economy analysis of education.

Although many of the concepts and attributes of general systems theory can be used for examining both the Ghanaian social context as well as the educational innovation operating within it, it is the more recent analytical advances of political economy of education that provides better explanations. Let us turn first to Havelock and Huberman's theory.

Havelock and Huberman (1977) were able to demonstrate how various aspects of the theory can be applied to the analysis of innovation projects in developing countries. General systems theory subsumes a great number of concepts some of which I shall attempt to explore within the scope of this work.

Summarising their idea about an organ with these wide-ranging functions Havelock and Huberman suggested some special structures which they described as follows:

> "*As they become more differentiated, all systems tend to develop specialised sub-systems to cope with input, to manage the various processes ... and to carry on dialogue between sub-systems. ... Some education systems may feel the need for special departments for the 'innovation'. Such departments will most often serve primarily as input managers or facilitators." ... An innovation project in a country might need to have a special mechanism (sub-element or office) to manage relations with the existing education system in the country or with other*

> *existing social and political structures and also deal with foreign relations*."
> (Havelock and Huberman, 1977, pp. 49, 55)

Handy (1976, p. 181) sees this function as one demanding a 'task culture' to handle an innovation and bring it to an appropriate level of system completion. But the 'task culture' is to be understood as an essentially 'temporary system', in Havelock and Huberman's terms, and implies the bringing together of the right expertise, the right powers and the right resources to deal with a specific innovation. The task culture therefore operates through a group or team set up for a specific purpose which is then dissolved when the work is done.

But although the Curriculum Development Centre (CDC) at Winneba can utilise the task culture management style in dealing with specific innovations, it is not in itself a 'temporary system'. The CDC is rather a permanent organ of the MOE, with functions revolving on a continuous basis ranging from research and development to evaluation, all geared to system renewal and maintenance. The CDC indeed is a 'special department' set up to 'manage or facilitate' innovations continually and manage relations /dialogue with other existing sub-systems by exploiting whatever expertise, resources and techniques that are most applicable.

Innovation A Strategy for Development

Innovation is a strategy for change and has been defined by Huberman as:

> *"... the creative selection, organisation and utilisation of human and material resources in new and unique ways which will result in attainment of a higher level of achievement in the defined goals and objectives*"
> (Huberman, 1973, p. 5)

In educational innovations such goals and objectives are derived from the sub-system/environment interactions in which political, economic and societal changes demand necessary complementary changes in the educational sub-system. Furthermore, innovation in

education could be induced by intra-system factors arising from new need and goal specifications within the education sub-system itself such as, for example, the improvement of teaching skills or the development of new materials. Indeed, the focus of innovations in education is varied depending on what needs have been identified. Havelock (1971) located two clusters of innovation of which one is of relevance to this study. This category describes four types of innovation thus:

(i)Change in size and scope of operations – requiring outlays of capital, labour, space and equipment;

(ii)Acquiring new skills – as in retraining teachers for new curricula, team teaching or the utilisation of language laboratories;

(iii)Changing goals – as in the introduction of self-instructional materials …;

(iv)Changing values or orientation – where many of the adopters' long held principles are at stake, as in the elimination of examinations etc.

The educational innovation studied here embodies all of these four characteristics and more as will be evident in the thesis.

Innovation Strategies Huberman (1973) emphasised that in order to embark on successful implementation of change two factors must be clarified:

-'*the complexity of the operation itself, and*
-the degree or type of behaviour change required of the receiver'
(Huberman, 1973, p. 12)

For, as he explained, these are crucial for estimating the difficulty as well as the facilities that are necessary for the change. These are definitely important variables in selecting strategies for the innovation and occupy a central position in the approach that has been adopted in this study but there are other variables which need also to be considered in selecting strategies for change.

Whatever strategy is chosen, however, is guided by the value positions and assumptions of the innovators about education, change and development and about the social organisation.

From a literature survey on strategies in planned change and innovation Havelock and Huberman (1977) synthesised a set of strategies found to be commonly in use in such situations. Six major categories were listed:

1. locally participative and responsive problem-solving and self-help strategies (Havelock's Problem-Solving);

2. power, authority, administrative, and legalistic strategies (Chin and Benne's Power Coercive);

3. strategies emphasising openness, flexibility, eclecticism (i.e. no particular theory) and multiplicity of inputs (a position which derived from Havelock's 1973 data);

4. strategies emphasising communication and diffusion of innovations through various channels and inter-personal network (the social interaction perspective Rogers and Shoemaker, 1971);

5. systematic, research-orientated and evaluation-controlled approaches (Havelock's RD and D perspective); and

6. approaches which emphasise inside-outside co-operation and dialogue (offered by Havelock as 'linkage model' to bring together positive elements of other perspectives).

The authors have also identified six major barriers commonly encountered in innovative situations and it is worth listing them as check-list for this study:

1. underestimating the process i.e. poor co-ordination and connection to political leaders, confusion and inadequate planning;

2. personality conflict and motivation, i.e. Understanding others, energy lack, rigidity, no openness to change, insufficient personal rewards;

3. underdevelopment i.e. Slow transport, materials delay, colonial vestiges, manpower lacks, long distances, inflation;

4. financial problems i.e. not enough financial support from inside or outside, economic conditions and priorities;

5. opposition from key groups i.e. Ruling elites oppose, conflicting ideologies, slow implementation, objections from special interests;

6. poor social relations, i.e. Problems between team members and others, disharmony within the project.

In selecting the model for use in evaluating the Ghanaian innovation I have kept in mind these ranges of strategies and barriers and the value positions underpinning them but I have found it most appropriate to adopt an analytical model developed by Havelock and Huberman (1977) in their study of educational projects in developing countries. The choice is made primarily because their model is one of the very few attempts to apply any form of theoretical model for the evaluation of developing country innovations and secondly, because their model effectively demonstrates the essential concepts of the systems theory of interdependence between development planning and innovation planning and management.

Kingdon et al (2014) argue that it is their intention to put the theory of political economy to use in evaluating the research on education systems in developing countries. Alternative approaches offer somewhat different analytical tools that are more or less useful depending on what is being studied.

The authors argue that:

> "Our review examines the interests, incentives, strategies, contexts and exercise of power of key stakeholders in the formulation and implementation of educational

> decisions. The focus is on two types of decisions those related to increasing schooling access, and those relating to improving the quality of schooling. Earlier writing has suggested that access oriented reforms tend to be easier to implement, since they provide citizens increased benefits and politicians tangible resources to distribute to their constituencies such as an expansion of jobs for teachers, administrators, service personnel, construction workers and textbook and school equipment manufacturers"
>
> (Kingdon et al, 2014, p.7-8)

Quality enhancing reforms by contrast often focus on accountability and cost-effectiveness and threaten the interests of many of these stakeholders who turn to block their implementation (Grindle, 2004). Kingdon et al argue that the political economy of education is influenced by a number of internal and external actors. The key stakeholders in education systems within a country include *inter alia* both bureaucrats and political entities, voters (parents and others) government officials (Minister of Education, other ministry officials) local government officials local authority, school officials, school management (headteacher, governing body and teachers and teacher unions). Teachers are perhaps the most crucial input in educational process, their interests may sometimes deviate from student interests, making them key stakeholders in the educational process.

Government officials are key stakeholders with significant responsibility towards the electorate in delivering education in an equitable, efficient and effective manner. The political will of officials, often working in alliance with policy entrepreneurs has been identified by Kosack (2009) to be important in relation to the provision of basic education and education for all (EFA) using illustrative cases from Ghana and Taiwan, pointing out that policies for, and progress on quality basic education are to be found in autocratic as well as democratic states. Kingdon et al argue that many of teachers actions and school outcomes that they are accountable for are influenced by incentives and constraints operating outside the schooling system. And that each of these factors influences different aspects of education reform whether policy design, financing, implementation or evaluation.

Kingdon et al suggest that:

> "Examining issues in the case of education may not be amenable to a particular disciplinary lens and is better served through an inter-disciplinary approach. A key contribution of this review is to pull together the essential literature from various disciplinary and interdisciplinary traditions and to provide a conceptual framework which to situate the analysis of political economy issues in education research. Another contribution is to carefully review existing literature and identify research gaps in it."
>
> (Kingdon et al, 2014, p. 21)

While the positive economy framework allows us to think about the relationships between institutions and actors, it does not provide a clear model for the education policy. It is here that the demand work of Havelock and Huberman (1977) is better fitted to providing the conceptual framework for the study.

Elements of the Havelock and Huberman Innovation Theory, Context and Status

The authors described an innovation as a system encapsulated within the sub-system of a macro system. In the Ghanaian context this means that the educational innovation is a system within the educational system which itself is a sub-system of the national macro system. All these larger systems provide the essential contextual environment within which the innovation operates: the input-throughput-output mechanisms all take place in this milieu:

> "*it is vital to recognise at all times the essential interdependence of these levels of systems in successful innovations …*"
>
> (Havelock and Huberman, 1977, p. 35)

Innovation is also described as a 'temporary system': temporary in the sense that innovation as a mechanism of system change remains until system tensions are resolved through the implementation of the innovation at a level when it ceases to be new and becomes 'routine' thus bringing back the system to a stable state. The innovation at this stage terminates naturally.

In the Ghanaian context the educational innovation is influenced by several levels of sub-system environments from which it derives important inputs. Thus, it requires to interact

with the needs of all systems from the macro-national level to the school level. Not only that, there are other special sub-systems which seriously influence the innovation. Professional bodies, for example, make vital inputs into how the innovation is conceived and managed. Ideas from such bodies often derive from beyond the immediate sub-system environments thus stretching the capacity of the innovation for interaction at a level much higher than the demands from its immediate proximate context. For example, the context of vocationalisation as an innovation strategy is not limited to Ghana alone: it is an internationally held assumption about the way education could be made to serve the needs for economic and technological development more effectively. This perception and the definition are then 'imported' from the remote international environment as an innovation into the Ghanaian system to be implemented in the schools in the regional sub-system.

The multi-level origin and interactions that characterise the process of innovation have implications for its planning and adoption. It raises questions about the degree of openness that is desirable in the planning and designing of an innovation. How far for example are decisions at the macro-system level able to actually rationally determine what the system's needs are vis. a vis. their interdependent relationship with the metropole system? How far will the innovation at the school sub-system level be able to maintain a balance between the perceived goals at the school level and the taken-for-granted specifications handed down from the macro system and the assumptions of the international bodies? In the assumption that vocational education is 'a good thing' as is universally held, really so good in the context of Ghana's requirements and the requirements of the individuals in that sub-system? Researchers have had cause to call these assumptions seriously to question as: Foster (1965) and King and Martin (2000) Akyeampong (2014) and Lewis (1965) found in Ghana: Anderson (1970), Lewin (1981), Bacchus (1980) found in Kenya, Sri Lanka and Guyana. Blaug (1973), Lillis (1983) and

Oketch (2007) found similar evidence in their surveys of several developing countries. The next section introduces and elaborates this model.

The IAC Model

The IAC model advanced by Havelock and Huberman has been useful in developing an analytical tool for use in data gathering. The model represents the three major variables whose interactions, the authors claim, affect the outcome of an innovation. These variables are the Infrastructural Configuration (I), Authority (A) and Consensus (C).

Infrastructural Configuration (I)

The (I) variable represents not only the structures, facilities and resources, i.e. inputs, available which may be employed for the benefit of the innovation, but more importantly, involves the actual marshalling and orchestration of these inputs in a manner that is seen to be most effective. Such a problem-solving approach is what the authors have called 'procedural' or 'infrastructural' configuration.

A relevant infrastructure ensures that felt needs are correctly located and defined with appropriate solution which have been tried for validity and which are realisable within available resources. A relevant infrastructure also ensures cohesion and connections in the implementation so that efficiency is maintained through rapid link-up of staff and resources where and when they are most needed. Thus balance is maintained in the innovation system and the level of integration and interdependence is heightened between all sub-systems. Employing this problem-solving configuration the system:

undertakes a clear definition of problems to be solved and procedure which the innovation has to follow;

defines the essential functions that must be carried out;

draws up the sequence in which tasks must be performed;

identifies the skills needed by people who are deployed to perform the tasks;

evaluates and selects resources to be processed to bring about the planned change;

links up with connections needed to co-ordinate the various components, to link up innovation systems with resources in the larger system, and to ensure effective flow and distribution of outputs from the innovation system to the larger system.

In this problem-solving configuration, missing elements in the system are regarded as needs or problems while the elements 'created' or 'acquired' for rectifying these needs are regarded as solutions. The 'procedural configuration' is in effect a check list of how far there exists in the system the ability, competence, and the conditions necessary for handling the innovation.

Authority (A)

Havelock and Huberman (1977) further identified two other variables necessary for effective innovation process and these they describe as 'optimal political conditions'. Under the first of these political conditions comes the authority variable which they have explained gives 'energy and direction to the problem-solving cycle'. Authority is concerned with the decision-making and executive powers which are relevant political support for policies, decisions and actions taken. This essential power comes from actors at super-ordinate system level including the government political leadership and the bureaucratic leadership which has two sub-groups of administrators and professionals. An appropriate level of authority from these groups of actors would ensure political backing for adoption, resource acquisition, smooth implementation, conformity and continuity with the innovation plans. Of particular importance is the issue of continuity which is badly affected when staff are deployed unceremoniously in and out of the innovation project. The right level and form of authority supports guard against this.

Although this elaboration has given indication of the importance of the A factor in the problem-solving process it fails to explain adequately how it is to be applied for analysis since the characteristics of authority are not given. I have therefore found it necessary to explore and develop this idea further to make it applicable in this study. In their approach Havelock and Huberman had sought to avoid a complex treatment of the authority concept but I have found it vital to break down the concept into basic components in order to demonstrate how it operates. Using Handy's (1976) conceptualisation of authority, power and influences, it was discovered that authority derives from a variety of forces including physical, resource, expertise and personal power. Each of these provides the legitimate basis for authority to be valid and therefore influential: without legitimacy authority cannot be used to exert and influence. The most important authority bases as found from the study of the Ghanaian context, seemed to be physical or coercive power and resource power. These seemed to have played crucial roles in influencing the course of the innovation as will be revealed.

Another dimension of this model is that where authority is lacking there is a tendency for the infrastructural configuration (I) to be negatively affected such that an otherwise appropriate I capability is very much diminished. Where the capacity for problem-solving is found to be adequate but there is no authority support backed up with relevant power bases, such as resources or legislative facilities the capability is rendered in-operational. An inadequate A not only destabilises the I capability but also tends to generate conflict and lack of consensus through its negative influences. How all these elements operate in relation to the innovation will be seen as evidence is presented in the thesis but for the moment I shall examine the consensus factor of the model.

Consensus (C)

A second dimension of the 'optional political conditions' involves the generation of agreement/consensus between the consumer/clients of the innovation and the decision-makers, planners, administrators and implementers. This implies an integration and interdependence between the super-ordinate and the subordinate sub-system levels. Actors most concerned here are all those who will in one way or the other be affected by the innovation and this includes various members of the community such as teachers and pupils in schools, parents, employers, post-secondary institutions and opinion leaders.

It has been argued above that inadequate or wrong application of ‘A’ tends to generate negative reactions and lack of consensus in the sub-systems concerning the innovation. For this reason therefore, strategies which place the ‘negotiation of meanings’ in the centre of the implementation process would tend to promote consensus more effectively because they heighten the process of integration between the sub-systems. Havelock (1973) had in fact suggested strategies such as building up individual and group-acceptance, effective communication and flexibility as ways for gaining acceptance and achieving consensus.

The breakdown of the IAC components reveals their systemic attributes of interdependence and integration for they tend to exert influences on one another such that inadequacies in one area induce corresponding deficiencies in the others. While ‘A’ would appear to be the controlling factor, without a strong ‘I’ support to provide the expertise and to manage the problem-solving process, ‘A’ becomes handicapped and its control on affairs weakens as will become evident later in the thesis. While ‘I’ embodies the actual operation of the innovation through all phases of the problem-solving cycle, ‘A’ and ‘C’ represent the socio/political factors that significantly modify the process. Thus in presenting the infrastructural evidence I shall be examining the full details of the actual implementation of

the innovation, while the evidence of 'A' and 'C' are presented as modifiers. This would explain the seeming skewed balance in my treatment of the analysis.

At the appropriate stage each component of the model will be further clarified as it will be used for analysis.

Evaluation Theory

Evaluation is the process which makes it possible to establish dialogue and create the feedback mechanism used for monitoring performance in the system. Approaches to evaluation have flowed from the different meta-theoretical perspectives which I have identified to keep in view in the development of this work. Earlier evaluation methods were summative, undertaken at the completion of a project, and comparative with a control group against which to match the study. A later strand emerged from America using formative evaluation to monitor and modify ongoing projects.

One model from the interpretive perspective is the illuminative evaluation model developed by Parlett and Hamilton (1976). In recognising the role of individual parts i.e. the concept of differentiation and specialisation, this model is complementary to the general systems theory in as much as there is effort to understand the activities of separate parts in their own right. Ultimately the intention is to bring behaviour to match defined needs and also to adjust goals to fit with behaviours so as to achieve a consensus.

The concern of this model is to bring together the wider context of an educational innovation by description and interpretation. It aims to study the operations of an innovation project, influences on it from the school context, its effects as seen by the learners, the opinions of the implementers and planners about the project. In short, it aims to 'illuminate' the complex factors that arise out of interaction between the innovation project, the 'instructional system' and the 'learning milieu', the two concepts used to describe the formal

proposals, i.e. the objectives and implementation strategies of the innovation, and the context in which it is to be implemented, by means of comparing the perception of the actors and observing how they manage to co-operate by negotiation. The instructional system includes the blueprint which sets out the goals and objectives of the project:

> "*The learning milieu concept is necessary for analysing the interdependence of learning and teaching, and for relating the organisation to the immediate and long-term responses of student*s"
> (Parlett and Hamilton, 1976, p. 91)

The illuminative strategy uses observation, inquiry and interpretation to collect and sort out information regarding the innovation. Thus, the techniques include observation, interviews with various groups of participants, questionnaires and test data to cross-check on information collected from other methods, official documents and interviews with decision-makers and planners and seeing the innovation as having no meaningful existence outside the consciousness of the actors. There is no doubt that the results of such a holistic approach will be valuable to innovation planners, implementers and the teachers.

The illuminative evaluation strategy appears to have very much in common with Havelock and Huberman IAC analytical model already adopted for this research. They both seek to 'illuminate', and interpret the interdependencies and dissonances that grow out of interaction between an innovation and the complex elements of the systems into which it has been introduced. This fit between the two analytical procedures has guided my decisions on the evaluation technique to apply, as is reflected in the methodology of the study developed in Chapter 4

Parameters of the Study

Numerous questions and issues surround any study of innovations in education. Here, the researcher was able only to explore some themes at the expense of others. This selectivity is an obvious consequence of research in general and one that is acknowledged as a limitation

in this investigation. The writer also recognises that his own perceptions and values shaped the investigation and qualified its interpretation.

There is still much room for further study, as it would have been very beneficial to have the opportunity to interview former JSS graduates on their opinions of the research questions. However, this was beyond the scope of the project.

Areas of Focus

This study aimed to explore and examine policy and practice in Ghanaian education, with special reference to the junior secondary school reform. Therefore, the initial aim was, very broad; it was necessary to sharpen the focus. Consequently, certain decisions had to be taken at the outset. The first was the deliberate and explicit decision to concentrate on teachers' and students' perceptions for the empirical dimension. This was based on the fact that teachers are important actors within the process of transformation of schooling in Ghana. In addition, many of the teachers in Ghana at the end of the twentieth century had experienced two different educational systems, and it seemed timely to explore their perceptions of them.

The second decision was to focus on three regions which followed from the desire to investigate the JSS reform in three case schools. It seemed advisable to focus on three regions because it would not have been feasible in a study of this scope to examine junior secondary schools in all ten regions of Ghana. An investigation of the transformation of the middle school into the junior secondary school seemed particularly interesting, as it would be possible to gauge the teachers' assessment of the problems and potential of each of the school types.

The Structure of the Thesis

Subsequent chapters are mapped as follows. Chapter one discusses the role played by the Christian missions, as well as the Islamic and Indigenous education systems; each has implications for the others, because they all have similar legacies influencing educational

dynamics in the present day. Chapter two explains the impact of Ghana's economic profile on education and examines educational developments and structures. Chapter three presents a review of contemporary Ghanaian education with emphasis on the post 1987 reforms and the implementation of the Junior Secondary School and concludes the first part of the thesis.

Chapter four begins the second part of the thesis by elaborating on hypothesis, issues, research questions and methodology. Chapter five presents the analysis and general issues of educational innovation regarding data on conceptual issues on the JSS reform. Chapter six closes data presentation with evidence on the Authority (A) and Consensus (C) factors; the analysis of case studies of three JS Schools and continuous assessment and vocationalised curriculum. Chapter seven constitutes the last part of the study, synthesising and evaluating the research findings and making conclusions and recommendations for future decisions and actions.

* * * * * * * * * * * * * *

Having presented the theoretical and practical introduction to this work, it is now necessary to proceed with a discussion of context.

Chapter 1

Legacies and Context in Ghanaian Education up to 1974

Introduction

In pre-colonial times, education was already deeply rooted in Ghanaian communities, as it was in most other African societies. In general, traditional education had, and still has, the sole purpose of introducing society with all its institutions, taboos, mores and functions, to the individual, making them a part of the totality of the social consciousness.

However, an alien education from Europe has been spread in varying degrees over what existed prior to century in African countries, whether it was indigenous African or Islamic, producing a range of situations, which can only be understood in intercultural terms. Christian mission education was hard to resist because it enabled African communities, as in Ghana, to take advantage of modern knowledge, which seems essential for economic and social development. At the same time, it threatens also to bring distinctive social and cultural changes, as has been described by N'tchougan-Sonou (2000) in the case of Ghana and of Togo.

Christian missions, Islamic, and indigenous education systems have implications for each other, and will be briefly treated here in turn because each has legacies for the present day.

The terms 'schooling,' 'formal education' and 'modern education' are used interchangeably in this thesis to describe 'instruction,' but traditional education has meanings which go beyond the global experience of modern education to include formalised rites of passage from one stage of life to the next and apprenticeship into a family trade or a special

calling. However, many of the more practical aspects of apprenticeship training have been integrated into, and somewhat transformed by, the modern economy of Ghana. Consequently, many rites of passage have shed some of their more demanding aspects, due to the influences of Christianity and Islam. Nonetheless traditional education is very closely linked to traditional culture, which is still valued to some degree by the majority of Africans, and, therefore, needs to be addressed first.

Traditional African Education

Since formal schooling or ‘western’ or ‘modern’ education was introduced relatively recently into African culture and was initially a tool that non-Africans used to achieve European goals not inherently related to African well-being, it sometimes comes into conflict with African social mores. Hence, modern education is perceived as providing the tools for entry and advancement in the modern sector of the economy rather than as providing skills needed for daily life in the more traditional context. Thus, the latter skills have resided in the domain of African traditional education, which remains separate from schooling as such, and therefore, strongly rooted within the family and community as a pillar of African identity.

Since African traditional education is closely linked to the everyday life of the community, the education offered by groups outside the community (usually missionaries) was initially seen as a threat. Considering the problems of psychological alienation and lack of practical skills enabling them to 'fit in' to their home communities - which have been experienced by school goers since the introduction of formal education - the threat was very real.

The educationist Dr Moses K. Antwi explains that "traditional education is an integrated experience which combines not only physical with character training but also manual with intellectual training" (1992b: 2). Dzobo (1975) says that there is no ‘rupture’

between life, society and learning in Africa - the entire community is involved and every occasion provides an opportunity to teach or learn a lesson. The pedagogy is based on the principles of observation, imitation and participation, and there is a hierarchy of authority in the mastery of various tasks, which is related to age and experience and enforced by the cane. Children are encouraged not so much to ask questions as to watch closely and try for themselves - they will not be punished as harshly for making mistakes as they will be if they annoy their parents or teachers with silly questions. This stands in marked contrast to Western principles of child rearing, whereby children are given a great deal of individual attention and encouraged to be talkative, critical and inquisitive.

Traditional education is not something which was totally replaced by formal education. It continues to form the basis of the child's training as a member of society and is still seen by many persons interviewed in this study as fundamental to the child's success in life. The integrated and holistic nature of this education is something that modern educational reforms in Ghana are attempting to recapture by inserting component parts (in the form of 'Religious and Moral Education', Life Skills', 'Vocational Studies' and Cultural Studies') back into the primarily academic structure of formal schools.

Traditional education was successful for centuries in preparing children to live in their society, whereas formal schooling, which has been in place for less than a century in most places in West Africa, has been blamed for divorcing Africans from their environments. Even outside Africa, formal education has become the scapegoat for many social ills. Programmes in character-building, vocational training and community participation have been grafted onto existing educational structures in an attempt to address those needs that go beyond the purely intellectual or academic (Brown & Hiskett, 1975; Bray et. al.1986; GOG, 2004)

The basic aim of the traditional ‘Ghanaian’ educational system was to train the individual to be a useful and acceptable member of society. Only things the child really needed to know were taught, and in the end the child's behaviour and character had to conform to standards already set by society. The focal points were the individual and society but emphasis was more on society as a whole. This is because every society whether simple or complex has its own way of educating its people. The goal and method of approach will differ from place to place. ‘Ghanaian’ traditional education, however, long pre-dates the arrival of Europeans in Africa and is holistic, seeking to combine character building with particular skills. Busia and others have shown that the patterns of traditional and practical education had been developed to a considerable extent and were an essential part of the social organisation of all communities in Africa (Busia, 1962, 1964; Moumouni, 1968; Dzobo, 1971).

When discussing its organisation, the best term to use is ‘informal.’ There were neither classrooms nor specialised teachers. 'Tutees' picked up their instruction from almost everyone in the community. Even today, a little boy who refused to give up his seat on public transport to an elderly person would find the whole passenger population chastising him. This provides a glimpse into how the values of the society were imparted to younger members. In this context there was great respect for old age. In the indigenous ‘Ghanaian’ educational experience there was no organised syllabus, everything depended on genuine skills (Ayittey, 1991, Bartels, 1975).

As for the content and scope of traditional education, the main areas covered were character training or moral development; vocational education; intellectual education; physical education and social education. Character training was considered very important. Parents trained and supervised their children's lives to be on a par with society's moral values, such as sociability, courage, solidarity, honour, endurance and diligence. The child could be chastised

for acting contrary to any of these norms or qualities (Ayittey, 1991; Bartels, 1975; Callaway, 1975).

Brown and Hiskett (1975) sum up in the following words:

> *Traditional African society viewed the possession of children as a great benefit not only to their parents (the barren woman was frequently shunned) but also to the community at large. It was therefore the community that was the primary agent of education and its adult members were expected to play a part in the child's socialisation* (p.22).

Family terms like 'father' and 'brother' were used much more widely than only within the nuclear family, and in some cases they were titles given to members of the community who did not belong even to the child's extended family (ibid.).

Informal education was and still is invested with this overall social context and function. Children's games are important and frequently take the form of copying the activities of adults: hunting and fishing for boys, mother-care and housewifery for girls. Important too, is the history and folklore of the community which is passed on from one generation to another by word of mouth.

'*Ananse'* stories were used to inculcate these values in children. In one story, a cheat is terribly disgraced and ridiculed (the children would not want to emulate the style of such a person) and the hero is identified with courage and honour and praised. The children will unconsciously emulate this hero. At other times children will emulate the ways of prominent adults around them. A further way of teaching was the use of certain rites, for example, puberty rites. This taught the adolescent to be chaste before the rites or be disgraced. After the rites, she was considered ripe for marriage and almost always got married soon thereafter. There were also initiation rites (Abban, 1994; Dzobo, 1975). More formalised educational practices are frequently associated with rites of passage into the adult community. This frequently involves the segregation of the sexes, their isolation from the community, sexual

education as well as tests of courage and endurance in the case of boys, and something of a 'finishing school' in the case of girls (Ayittey, 1991; Kaye, 1962).

Another component was vocational training. A respected man in the traditional society was the one who possessed a skill and could contribute to the economic life of the community and was, as such, economically independent. The one who earned a good living was the ideal man. In order to bring up their children to these standards, parents and relations taught their children their own vocation. In other cases, children were allowed to choose and were then sent to the relevant master craftsman for internship or apprenticeships; some of this vocational training was formal. Such examples were the training of certain specialists like priests, hunters, master drummers, chief's spokesmen and herbalists.

Another area of training was intellectual. Some writers like Abdou Moumouni (1968) maintain that this was non-existent, but that conclusion is not secure. In fact, some areas of traditional education touched on were, in effect, History, Geography, Science, Religion, Logic and Oral Arts. The history taught was confined to that of the particular clan and community involved.

Young people were also taught the type of soil suitable for certain crops and about weather changes which influence agricultural regimes. Children were taught the fallow system and shifting cultivation, both of which are, in effect, agricultural science. Astronomy was included so that children could know the stars and the sky to be able to determine weather conditions on the seas and the types of fish associated with those conditions. They were also taught proverbs (Abban, 1994; Obeng, 1996).

The educated person was the one who could back his/her arguments with proverbs. Other media for education in oral arts were folktales, riddles and quizzes (Obeng, 1996). To be trained in the language or philosophy of the community, the child was given the opportunity to

talk in public in order to gain proficiency. Likewise, physical education was, directly and indirectly, introduced to the child right from the beginning. The society had no use for frail individuals. Children engaged in a variety of games like running, jumping and balancing and in ‘Ghanaian’ traditional society, wrestling was organised for the boys and this helped them develop their physique. A game for girls called '*ampe*' involved lots of jumping, clapping and throwing of the legs in a particular pattern and this helped them to develop physical fitness.

Bartels puts it in the following words:

> *Besides his nature lessons, the child gradually learns to handle the cutlass. He takes part in the seasonal occupations of ploughing, sowing and harvesting, always being assigned a defined area, however small, to work in. When he grows up, his father will recognise his adult status by giving him a gun for hunting as well as for playing his part in the local defence force, the Asafo (friends in arms).*
> *The aim of a girl's education in Akan society, that is, the making of a good wife and mother, becomes dominant in the relations between herself and her mother from about the age six. Some day her conduct as a wife will, in the eyes of many, reflect the character of her mother* (Bartels, 1975, pp.50-51).

Finally, there was social education. As children played games, ate, worked and worshipped together, they were indirectly encouraged to adopt the spirit of communal life, which was a feature of the traditional society. This is because children always did things together in their age sets. Sometimes children were organised into tugs-of-war and everyone was encouraged to give of his or her best. Those who were passive pullers were chastised. This encouraged the spirit of cooperation.

In imparting knowledge and skills, the basic methods of learning were listening, observation, imitation and participation. Children mostly learned through direct experience gained from the cultural environment (Bartels, 1975, Castle, 1966).

Another widespread aspect of more formal education was provided by apprenticeship schemes. These have too frequently been ignored in descriptions of educational provision in

Africa (Baumann & Westerman, 1957). Yet, as Archibald Callaway (1975) has shown they have not only played an important part in preparing young people to be artists and craftsmen, and holders of community offices, but they have also to some extent been 'carried over' into the modern sector of the economy.

For the Western educator it is not so much what is taught informally within the home that is important, but how that child is instructed. Odaminten (1995) describes the way children learn thus:

> *''The method of oral instruction is used to direct the ignorant as to how to go about doing things for the first time successfully...the child is expected to listen carefully and ask only questions that call for clarification...a child who answers back or asks questions is hushed down and called a bad boy or girl. As a child or young person, he is to listen to his elders who are experienced and who know better''* (p28).

Reward and punishment play an integral part in socialisation of the young child. Professor Odaminten goes as far as to suggest that ''old ladies keep long finger nails for the exclusive purpose of scratching or pinching the errant child!'' (ibid.).

The relationship between adult and child is one based on authority and respect. Adults are expected to keep their distance from the child, ''keep way from childish things'' (ibid) and to set personal standards of behaviour in accordance with prevailing social norms. Communal rather than individual identity is to be developed coupled with the belief that, ''in the indigenous 'Ghanaian' society women have definite and specific roles to play'' (ibid.).

Pros and Cons

What were the strengths and weaknesses of the traditional 'Ghanaian' educational system? The first merit was that it was functional, the emphasis being on utility and instrumentality. Education is the process of passing down to each generation the culture of that particular society: culture can be defined as that complete whole which includes knowledge, belief, art, morals, law, custom and other capabilities acquired by people as members of

society. It should be noted that it is dynamic. Everything learnt had relevance to the society (Castle, 1966).

The second strength is that it kept unemployment at its barest minimum. This was because the educational system was functional. A child taking up the parents' vocation would automatically, be established by his father after training and take over his father's business when he retired.

Another merit was that it was less expensive than the modern system. Most of it was informal and this kept the cost (especially overheads) at a very low level. Due to the spirit of communal living, fees - even if paid - were at a nominal level. Most people participated in educating the child without charging anything.

A fourth strength was that it encouraged retention since there was no record kept on whatever was taught; the incumbent had to retain all the facts in his or her head. It also promoted peace and harmony in that the spirit of communalism was inherent in the educational system (Ayittey, 1991; Kaye, 1962).

There was also the absence of letters and figures. Children then relied mainly on memorisation and recollection of oral traditions. Sometimes certain details of the culture were forgotten. For example, a farmer could tell his son that he (the son) was born "when he acquired his first cocoa farm". Lack of letters and figures led to a poor sense of description and comparison in weight, colour, distance and time (Abban, 1994). In other words, there were significant conceptual limitations.

Islamic Education

Islamic education is not indigenous to Africa, as Islam originated in Arabia, but by the close of the ninth century Arab immigrants had established an Islamic state at Shoa in the

Horn of Africa. By the thirteenth century, there were several Muslim kingdoms established (Bray et al, 1986, p.79; Westerlund & Rosander, 1997; Jenkins, 2000; Reese, 2014).

One of these kingdoms controlled the port of Zayla on the Somali Coast; by the early fourteenth century Muslim students from Zayla were attending the Islamic University of al-Azhar in Cairo. Ibn Battuta (AD 1304-1369) was a widely travelled North African Muslim scholar who visited Somalia in AD 1331. Mogadishu, he wrote, was 'a town endless in size' which was ruled by a Muslim, Sultan Abu Bakr (Hamdun & King, 1975). Ibn Battuta was given accommodation in a house for students of Islamic religious studies, and he noted the recognition and use of Islamic law.

The penetration of Islam from North Africa into West Africa began in the eleventh century but Islam experienced its most rapid and extensive advance from the early nineteenth century to the present day (Froelich, 1966; Robinson, 1999; Jenkins, 2000; Kaba, 2000; Levtzion & Randall, 2000; Soares, 2014). The advance was due partly to the establishment of theocratic empires such as Sokoto and Massina in the nineteenth century and partly to the new conditions, which occurred following the occupation of West Africa by the British and the French. Both the British and French colonial officials favoured Islam as a dignified religion for the African and consequently promoted its spread through the building of mosques, the patronage of annual pilgrimages by Muslim chiefs to Mecca and the establishment of Qur'anic schools.

As a consequence, Islam spread widely throughout the savannah zone of West Africa. The extent of Islamic influence in West Africa is shown by the fact that, according to estimates in the 1960s, approximately two-thirds of the 50 million Muslim population of tropical Africa were concentrated in West Africa (Froelich, 1966; Robinson, 1999; Kaba, 2000). In the city of Kano alone, there are 6 million Muslims. Muslim populations also

predominate in Mauritania, Senegal, Guinea, Mali, Niger and Sierra Leone, while proportionately smaller Muslim populations are found in Liberia, Ghana and Togo.

Islam by its nature fosters continuous education. It is one of the five obligations of a Muslim to go on a pilgrimage once in a lifetime to Mecca, and the journey itself, prior to the coming of air travel, was an opportunity for learning. The Islamic religion embraces both ethical and legal codes. Accuracy in transmitting its standards is considered essential; hence Islam encourages literacy in Arabic. In addition to its contribution to traditional education, Qur'anic schools were established in Muslim dominated areas. Islamic education was provided in different grades of schools by marabouts (El-Garh, 1971; Hunwick, 1997; Boahen et al., 2003; Obed, 2000; Jenkins, 2000; Kaba, 2000; Karpat, 2001).

At the elementary level, children from the age of six attend a Qur'anic school, where they are taught how to read and write Arabic through copying, and memorisation of selected portions of the Qur'an. From the age of nine, the children move on to 'knowledge' school to acquire a variety of Islamic branches of knowledge such as Arabic grammar and rhetoric, literature, Qur'anic exegesis and law according to the Maliki or orthodox school interpretation. At a higher level, maturing students become wandering *talibs* or 'seekers after knowledge' who go to the most noted scholars or *malamai* for a number of years to read through certain renowned classical books selected from a limited popular list. At the end of the course, which is marked by an important ceremony, the scholars give their students an *ijazah* (licentiate, degree) to qualify them to teach or to assume other religious functions such as that of the *imam* or *qadi* (judge). West African history abounds with examples of scholars such as Ahmed Baba of Timbuktu and Sheikh Usuman dan Fodio who have remained celebrated for their intellectual reputation and scholarly output (Clarke, 1982; Hunwick, 1997; Reese, 2014).

The Islamic education system is in many respects not dependent for its operation on specific administrative, institutional and organisational patterns. It also tends to be flexible and, as one scholar comments, has an 'admirable leisureliness' (Hodgkin, 1972). For instance, whereas in the Western system people speak negatively about 'perpetual students', in the Islamic system education is seen as an unending process and an individual can remain a student till old age or death. Some Islamic teachers prefer older and more mature students 'who have already shown evidence both of piety and of responsibility (Brown & Hiskett, 1975, Tibawi, 1979).

According to Boahen (1975), one major result of the effective occupation of Gyaman and Gonja early in the nineteenth century by the Ashanti was the steady inflow into Ashanti of Muslim traders together with their religion and culture. The process had begun earlier in the reign of Osei Kwame (1777-1801) but reached greater proportions within the next two decades. It is reported that Bowdich and Dupuis, on their visit to Kumasi, the capital of Ashanti, found about 1000 Muslims living there with the scholar Muhammad Al-Ghamba, alias Baba, as the head of the community. It is also stated that in the same place Baba had set up a school with 70 students including Asante’s students sent to him by the Asantehene. It is known that some of the Muslims had considerable influence as advisers or administrators at the Asantehene's court. An additional aspect of Islamic influence was that amulets made by Muslims adorned the wardresses of the Asante supposedly to guarantee protection from bullets. More importantly, another effect of the Muslim influence was the great expansion of trade between Ashanti, the north and Hausaland. The Ashanti bartered 19 products such as kola nuts (but not gold) for the exports from the north at Salaga, which remained the main market until 1874 when the Asante empire was overthrown by the British and the northern

trade was diverted to Kintampo and Krachi (Levtzion, 1966; Boahen, 1975; Boahen et al, 2003).

In modern Ghana, a great many Islamic converts are concentrated in the savannah zone in the Northern, Upper East and Upper West Regions. The British had declared a protectorate over these areas (then collectively called the Northern Territories) where there existed Qur'anic schools of different grades, which still continued to provide traditional Islamic training for the Muslim children. In 1899, an orthodox Muslim school in the then 'Gold Coast Colony' qualified for the first time for a government grant and this was followed by grants to two more Muslim schools. However, owing to the impossibility of recruiting Muslim teachers to teach English, the schools survived for only a few years (ibid.).

In the second decade of the twentieth-century, the Ahmadiyya Muslim Movement, a missionary body, entered Ghana to engage in educational work. The movement attempted to combine Islamic teaching with Western secular education. It established the West African headquarters of the movement at Saltpond in the Central Region in 1921, and two years later founded its first school. Within forty years it established 10 additional primary and middle schools in southern Ghana and Ashanti, and in 1957, its first secondary school in Kumasi received its first government subvention. The movement continued to expand its activities through the establishment of schools as first- and second-cycle institutions (Antwi, 1992; Hunwick, 1997; Boahen et al, 2003; Soares, 2014).

The theory of Islamic education is found in the Qur'an and in the *hadith* or traditions of the Prophet Mohammed. One hadith states that 'the quest for learning is a duty incumbent on every Muslim male and female', and another that 'wisdom is the goal of the believer and he must seek it irrespective of its source' (Tibawi, 1979). Other hadiths describe learning and wisdom as equal to worship, and of men of learning as successors to the prophets. For

example, one hadith states that 'God eases the way to paradise for him who seeks learning', and another states that 'angels spread their wings for the seeker of learning as a mark of God's approval or his purpose' (ibid.).

Bray and others describe Islamic education in the following words:

> *The time at which classes in Islamic schools begin varies, and is arranged by individual teachers. Two sessions are usually held each day, one in the morning and the other in the afternoon. Sometimes a third evening session is held for pupils unable to attend during the day, often round a bonfire. The existence of evening sessions makes it possible for children to attend both primary and Qur'anic schools. Parents can pay for their children's education by giving the teacher a gift or donation. If they cannot afford to do this they can still send their children to Qur'anic schools, and the children pay their way by working on the teacher's farm and by performing a number of other tasks such as collecting firewood* (Bray et al., 1986 p.81).

Although the system, as described above, is more common, some communities charge a fixed fee for Qur'anic education.

Although most Muslim children attend Qur'anic schools, attendance is not usually universal, even at the basic level. Furthermore, students who do attend may leave one school and join another if they want particular specialised subject.

Christian Mission Education

It is known that a Western form of education was introduced into Ghana in the early sixteenth century, not in response to any pre-existing demand but as a handmaid of Christianity, to serve the primary needs of evangelism. Initially the provision of formal education was a subsidiary function of the European merchant companies, whose activities in this field preceded the advent of real missionary endeavour by over a hundred years (Anim, 1966; Sundkler and Steed, 2000; Antwi and Jenkins, 2002; Hansen & Twaddle, 2002).

These first schools were attached to castles and forts which served as trading posts for the European merchants. There is historical evidence that by 1529, the Portuguese had opened one such school in their castle at Elmina. The Dutch, who ousted the Portuguese from West

African coast, also established a school in Elmina Castle in 1644, which continued to exist for more than 200 years. The English founded a school in Cape Coast Castle in 1694, while the Danes opened a similar institution in Christiansburg Castle in 1722 (Groves, 1958; Antwi & Jenkins, 2002).

The Portuguese King Joao III, in his instructions to the governor of the fort of Sao Jorge and the city of Edina, said:

> *Take special care to command that the sons of the Negroes living in the village learn how to read and write, how to sing and pray while ministering in church, and [how to carry out] all other duties connected with divine services. It is my wish that those priests who have the office of vicar and chaplains of the church there should take charge of these matters. Or, if they cannot, then some other person who may be better qualified for the task, one of those mentioned above, whom the captain should assign for the task* (Wiltgen, 1956).

In order to insure that these instructions were in fact carried out, the king instructed that the master at the school should be paid two *justos* (a piece of gold weighing 121 grains) per pupil taught at the school, up to fifteen pupils. He also instructed that the captain or governor of Sao Jorge should be paid the same amount per pupil taught, and also one additional *justo* per convert. Thus the captain was made at one and the same time the custodian of the church and of the school (Braimah et al, 2014).

According to Wiltgen, this venture under King Joao's instructions did not last very long. The one field in which the influence of the church became very outstanding was in the actual content of the education programme. King Joao's instructions to the captain or Governor of the Fort in Edina in 1529, quoted in part above, also included recommendations on the education of the sons of the local people. How much of this programme was in fact put into effect has never been certain, especially as some of the pupils seem to have been sent to Portugal to learn reading, writing and etiquette and later to qualify as teachers.

These European institutions had common characteristics. They were run by the European merchant companies, which delegated teaching duties to the chaplains assigned to the castles and forts. The pupils were largely the sons of European merchants and local women. The enrolment was supplemented by the admission of the children of some wealthier African traders in the urban centres. Reading, writing and occasionally arithmetic, and the inevitable core of biblical instruction, constituted the sum total of knowledge offered. In all these schools the teaching was done in a foreign language. Finally, a few local boys such as Jacobus Capitein, Anthony William Amo of Axim, Christian Protten of Christiansburg and Philip Quaque of Cape Coast would continue their studies in Europe at the expense of the merchant companies. Concentrating their activities entirely along the coast, the European merchant companies not only remained largely ignorant of the hinterland but also showed hardly any concern for the welfare of the inhabitants (Wiltgen, 1956; Asiedu-Akrofi, 1982; Antwi & Jenkins, 2002).

Catholic Augustinian missionaries initially worked in Elmina and opened short-lived stations in the Efutu and Komenda areas later on in the sixteenth century. French Catholic missionaries worked in Axim between 1638 and 1641. Catholic missionary work was interrupted by the departure of the Portuguese from the coast in the middle of the seventeenth century until Catholic fathers revived missionary work in Elmina in 1880 (Wiltgen, 1956; Wise, 1956; Hilliard, 1957). The Moravians also tried, unsuccessfully, to establish a mission at Christiansburg around the mid-eighteenth century (Groves, 1958). From the second decade of the nineteenth century onwards, Christian missionaries, such as those of the Basel and Bremen missions, and the Wesleyan Methodist, at their own expense, began actively to convert and educate the indigenous people in the face of fearful odds, the greatest being the high rate of mortality.

The Basel missionaries from Switzerland began their work in 1828 at Christiansburg, which is now part of Accra, the capital city of Ghana. Their main educational effort, however, began in 1843 when they opened a boys' school at Akropong Akwapim followed in 1847 by a girls' school and then a teacher training college and a catechists' seminary in 1848. From this station, the missionaries spread their activities in the Eastern Region and later in Ashanti and Brong-Ahafo Regions (Smith, 1966; Debrunner, 1967; Sundkler & Steed, 2000; Antwi & Jenkins, 2002).

The Wesleyan Methodist missionaries first reached Cape Coast in 1835 but their main educational work began in 1838. By 1844, the mission had schools in 18 towns, mainly along the Western part of the coast beginning at Accra and including Winneba, Saltpond, Anomabu and Cape Coast. The mission also made a short-lived attempt to establish itself in Kumasi. By 1850, the Basel and Wesleyan Methodist missions provided the main educational drive in the coastal area of Ghana; over 1000 pupils enrolled in their schools received instruction in arithmetic, reading and writing (Bartels, 1965; Addai-Mununkum, 2014).

British Colonialism

While ‘colonial’ and ‘Christian mission’ education are often taken as synonymous terms, the Islamic incursions were also examples of colonialism, and there is – as the British colonial period proceeds in what is now Ghana – a degree of distinction between purely ‘Christian’ and ‘colonial’, in the sense of classical colonialism (Altbach, 1982).

Nonetheless, the pace and direction of colonial education policy was dictated by missionaries who first opened schools in most parts of Africa to educate the indigenous peoples. These aims were similar throughout colonial Africa. Generally speaking, missionaries wanted literate men and women, who could read and understand the Bible, to do clerical jobs

and, as a major aim, spread the gospel (Graham, 1971; Barkan, 1975; McWilliam & Kwamena-Po, 1978).

> *From its very early days, education in West Africa was given a bias towards literacy, because missionaries wanted teachers and catechists, and Government and commercial firms wanted clerks* (Busia, 1969, p.344).

The various colonial policies followed the same pattern with the exception that emphases were placed on producing men who could serve as clerks and agents in remote areas to support imperial rule. A peculiarity of the educational system in this period was:

> *…churning out an endless steam of semi-illiterates whose education is judged solely by their ability to pass an examination* (Shattock, 1946, p.292)

This peculiarity was instanced by an English Commissioner in Gold Coast as early as 1818:

> *…the prevailing over-emphasis on religious instruction produces one of two results: either a boy reacts strongly away from it when he leaves school, and wastes his precious youth in intimating the amusements and voices of Europeans, or else he develops a fanaticism and religious presumption … after I heard the biggest boy in the class read very tolerably out of the scriptures, and answer every question by rote to him out of the catechism, I asked him if he understood the meaning of slavery. He said, yes, he thought it was. This poor boy had been taught to read and write well, but not to think; I regret to state that this defect in the system of teaching exists in most of the schools I visited in the Gold Coast* (Hilliard, 1956, pp.11-12).

The Phelps-Stokes Report

It was an unwritten colonial policy to frown upon anything indigenous such as local languages, local crafts, local social organisation such as chieftaincy and traditional religions. Before 1921, there was no comprehensive official educational policy in the Anglophone West African region. In 1925, the Phelps-Stokes Report on African Education (HMSO, 1925; King, 1971) came out as a result of African criticism of colonial education policy. The criticisms could be grouped into seven major categories:

- That education was unrelated to local conditions because it concentrated mainly on the acquisition of the '3Rs'. Colonial education was said to be too 'bookish'. Governors such as Lord Lugard advocated loyalty to the Crown, maintenance of law and order in preference to teaching Africans to learn in order that they could control their own affairs in the future on their own initiative. In contrast Africans suggested initiative and creativity to be the priority for schools.
- That social control by bureaucracy was heightened as a result of deliberate paternalism of the elite class. Africans suggested that this situation arose because political education was absent in the educational system. The Government, therefore, asked to take over administrative control of all educational institutions as opposed to the control of churches. Nonetheless, educational policy formulation should be made the responsibility of the community as a whole and not a prerogative of the Education Department alone.
- That constructive criticism of colonial education policy should be labelled as a 'fight into action'.
- That education in Africa should not be inferior to that in the Imperial country. Literacy as well as vocational subjects was demanded from the school curriculum.
- Those cultural factors such as language, social organisation and modes of economic production should be taken into account in the formulation of educational policy. It was noted that the idea of cultural factors responsible for poverty went unchallenged by the bureaucracy who reinforced the stereotyped concepts of the poor being responsible for their own deprived conditions. It was suggested that education should be made accessible to every citizen instead of the selective methods used in educational equity.
- That, as soon as practicable, Africans should be integrated into positions of control for educational affairs.

- That establishment of schools should be determined by popular request from communities rather than through recommendation by government or mission officials. It was suggested that this could be achieved if public taxes were used in the establishment of schools instead of grants from the missions or token grants from the government.

To a very large extent, these were the grievances and imbalances which were presented to the Phelps-Stokes' committee. Consequently, the Phelps-Stokes' report set out recommendations and ways to correct some of these anomalies in a way so as to cause little disruption in the existing system.

Colonial Government and Education

The educational system was to be modelled on the English pattern. The education ordinance provided for both government-financed and denominational schools, which would receive grants-in-aid according to their efficiency. One inspector of schools, the Reverend Metcalfe Sunter, Principal of Fourah Bay College in Freetown, Sierra Leone, was then appointed; in practice, his work covered all the British West African settlements. The reports of the inspector of schools showed moderate progress by the schools in teaching the stipulated subjects, namely, reading, writing, arithmetic, English language and, in the case of girls, needlework. English grammar, English history and geography were optional. Because the system of management by the missions led to difficulties, a new ordinance had been passed in 1887, with minor amendments which remained in force till 1925. The appointment of a director of education solely for the Colony in 1890 gave an impetus to the development of the Education Department, which directed educational development until it was merged into the Ministry of Education in 1956. By 1902, when both Ashanti and the Northern Territories had also come under British rule, the colonial government had 7 schools and was assisting 117

schools with grants totalling £3,875. The total educational budget was roughly 1.75 percent of the total government expenditure of £532,000 (Fage, 1959).

From 1900 onwards, the colonial government tried to deal with some of the problems which plagued the educational system. Growing unemployment among school leavers had evoked a comment as far back as 1846 from Lieutenant-Governor Winniet on the limitations of literacy education (ibid.), geared as it was, to the production of personnel for the church, the civil service and service with merchant companies. Little attempt seems to have been made to adapt the method of teaching to local conditions. Hardly any material was available for even an introduction to local history and geography. The general academic quality of education and the fact that it was not integrated with the economic, social and political needs of the local people concerned the colonial administration. Both Sir John Rodger and Hugh Clifford, who preceded Frederick Gordon Guggisberg as Governors of the Gold Coast, recognised the country's educational needs and both accordingly appointed educational committees to make recommendations for the improvement of the educational system.

It was Guggisberg who, on becoming governor of the Gold Coast in 1919, energetically seized the opportunity for educational expansion and reform. Apart from his own outstanding driving force, he drew on the experience of his predecessors, the Educationists' Committee on Native Education in the Tropical African Dependencies and the Phelps-Stokes Commission Reports. In his review of events of 1923, Governor Guggisberg pointed out that education was the keystone of the 'edifice forming the Government's main policy' (Guggisberg, 1928, p.199). Accordingly, he budgeted £120,000, an increase of £14,000 over the previous year's budget, for education alone, exclusive of buildings in the school programme. His immediate proposal was the founding of Achimota College - an institution which he said was destined to be the 'greatest institution for the higher education of the native

races of Africa'. It was his view that what the educational system needed was an institution where future teachers could obtain higher education themselves before actually learning to teach. He thought that a university was the eventual solution but simultaneously he acknowledged and worked on the principle that one would have to start at the secondary school level.

His ideas on the type of educational system that he believed was needed were clearly spelt out in his 'sixteen principles', which became the basis of the Education Ordinance of 1925. An examination of these principles shows that Governor Guggisberg held the view that character-building and industrial and professional training rather than literacy alone were the most important ingredients of any educational system. Unfortunately he suggested no syllabus for character-building but he contended that the system of education to be adopted should graft on the virtues of perseverance, thoroughness, order, cleanliness, punctuality, thrift, temperance, self-control, obedience, honesty, respect for parents and an appreciation of responsibility (King, 1971; Goodall, 1998; Braimah et al, 2014).

One might rightly take issue with the implementation of the 'character-training' aspect, which ran right through Guggisberg's educational programme. It was expected that in order to achieve such character-training, post-primary institutions were to be residential. Governor Guggisberg no doubt envisaged that schools organised on the lines of the residential and prefectorial system would inculcate in the students the highest virtues of civic responsibility, respect for law, order and traditional institutions, which in the long term would facilitate colonial administration. The financial burden, which such a residential programme would place on the education budget, was not thought to be significant (Williams, 1964; Goodall, 1998).

During Governor Guggisberg's Administration, which ended in 1927, provision of education was primarily in the hands of two agencies, namely, the missions and the government in that order of importance. As indicated in Figure 1.1, schools on the government's assisted list show a predominance of mission schools over the government schools in the period 1925-1927.

Figure 1.1: Government and assisted schools in Ghana (Gold Coast) 1925-7

Educational Unit	1925	1926	1927
A M E Zion	7	7	7
English Church	6	6	6
Ewe Presbyterian	22	31	36
Roman Catholic Mission	29	29	32
Presbyterian Mission	98	96	99
Wesleyan Mission	47	48	49
Non-denominational	1	1	1
Secondary	2	2	2
Mohammedan	-	1	1
Total assisted schools	212	221	234
Government schools	17	17	18
Total	229	238	252

Source*: Gold Coast, Report on the Education Department for the period April 1927-March 1928* (Accra, Government Printing Office, 1928), p.10

Figure 1.2: Government and assisted schools enrolment and grants 1925-7

Year	Enrolment	Grants-in-aid	
1925	29 573	£24 300	4s. 6d.
1926	29 332	£32 225	2s. 2d.
1927	29 640	£69 738	14s. 6d.

Source: Gold Coast. Report on the Education Department for the period April 1927-March 1928 (Accra, Government Printing Office, 1928), pp.8-9

Figure 1.3: Enrolment at teacher training colleges in 1927

College	1st year	2nd year	3rd year	4th year	Total
Akropong (Presby.)	50	45	53	47	195
Wesley College	32	32	29	24	117
Achimota	30	30	26	48	134

Source: Gold Coast, Report on the Education Department for the period April 1927-March 1928 (Accra, Government Printing Office, 1928), p.12

Details of direct government grants and the enrolment of schools listed during the years 1925-1927 are indicated in Figure 1.2. It is apparent that government assistance grants were more than doubled in 1927 because of a change in government policy. However, enrolment did not indicate the total number of pupils at school throughout the Colony and Ashanti since the missions had a number of schools whose standard was not considered good enough to merit a government grant. Governor Guggisberg emphasised the supreme importance of the quality of education and accordingly during his term of office he closed down 150 schools considered to be substandard.

Provision for education beyond the primary level was meagre and such facilities as existed succeeded only in making students into barely literate clerks. Available educational statistics show a bottleneck in post-primary institutions, particularly acute at the teacher training level on which the entire educational programme was expected to be built. Notwithstanding the efforts and enthusiasm of Governor Guggisberg, there were, in 1927, only three teacher training colleges for men. Together they were capable of turning out an average of 119 trained teachers a year up to the year 1930. (See Figure: 1.3).

No recognised training colleges for women existed other than the fact that the Roman Catholics had some facilities at the School of Our Lady of the Apostles at Cape Coast for training 12 female teachers annually. The number of training colleges and the number of trained teachers that they could turn out annually should be viewed against the fact that there were 234 assisted schools plus 18 government schools with a total enrolment of 29,640 pupils. In 1937, so great was the interest in education that the colonial government was obliged to appoint a committee to make recommendations for the evolution of a system of education that would suit the social, economic and political aspirations of the Ghanaian people. The colonial government took steps to implement the proposals of the Education Committee Report of

1937-41. For example, in the period 1944 -5, a grant of £25,000 was provided to improve primary education in the less developed areas. Moreover, the colonial government spent a huge proportion of the £4.5 million obtained from the Colonial Development and Welfare Funds between 1943 and 1955 to expand educational facilities at all levels (McWilliam, 1975). From 1944, a start was made with a scholarship scheme to train the staff of the Education Department and individuals outside the civil service to qualify them for higher posts in the service. The effect of this particular move was that, by the time independence arrived; Ghanaians were gradually moving to occupy key posts in the government as well as in business, industry and the professions.

Following the publication and the adoption of the Report of the Education Committee 1937-41, a Central Advisory Committee on Education was established under the chairmanship of the director of education to advise the government. Until its abolition in 1959, the committee formulated proposals upon which the colonial government based its changes to education. Within the same period, district education committees were constituted in the Colony and Ashanti to advise native authorities as to which schools to assist, thus paving the way for the absorption of all unassisted schools into government control later.

A major outcome of all the developments was that by 1950, of 2,904 primary schools, 41 were directly run by the colonial government while 1,551 received government grants. The total enrolment in these schools was 271,954 (Graham, 1971). There was a remarkable increase in the number of secondary schools, some of which owed their existence to indigenous Ghanaian enterprise. By 1950, there were 57 secondary schools, of which 2 were government controlled, 11 assisted and 44 unassisted. Four of the assisted secondary schools were for girls only, namely Wesley Girls' High School (Methodist), Aburi Girls' Secondary School (Presbyterian), Holy Child School (Roman Catholic), and St Monica's Secondary

School (Anglican). By 1950, almost 600 students in their final year in secondary school were passing the Overseas Cambridge School Certificate Examination. The number was nearly three times higher than it had been at the end of the Second World War (Graham, 1971).

By 1950, 19 teacher training colleges had 1800 student teachers on roll. These colleges were classified under three headings, namely the two-year Post-Middle Certificate 'B'; the four-year Post-Middle Certificate 'A'; and the two-year Post-Secondary Certificate 'A' colleges. In the teaching field there were 2,529 qualified Certificate 'A' teachers, 762 qualified Certificate 'B' teachers and 5,000 unqualified teachers in the elementary schools.

Technical education actually suffered a setback, apart from the opening of the engineering school in Achimota College in 1931, which was to train the country's pioneer engineers for the 17 years of its existence. Due to the economic depression of the 1930s, one of the four trade schools opened in 1922 during the administration of Governor Guggisberg was closed down and the remaining schools at Asuansi, Mampong Ashanti and Yendi became middle boarding schools. The lack of job openings, the prestige attached to 'clean-shirt' jobs and the low status accorded to technical workers still mitigated against the progress of technical education.

In conclusion, it is enough to state, that by 1950, the colonial government was spending 10 percent of its budget of £12,232,000 on education yet the country was far from achieving the goal of universal primary education (Fage, 1959). However, the Nkrumah Administration, which assumed power in 1951, aimed at making universal education a reality.

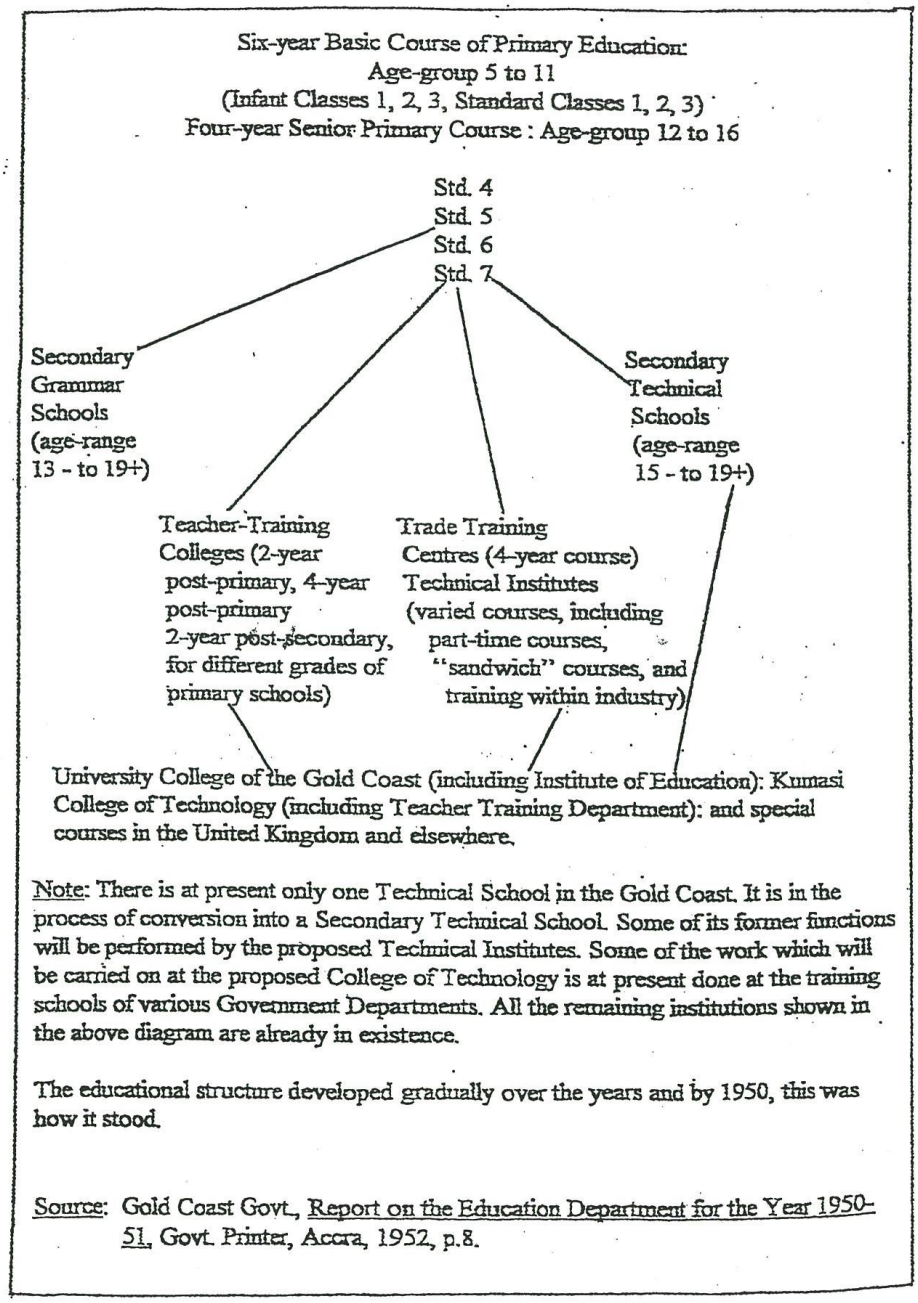
The Emerging Ghanaian System

The rectification process was a gradual one but, by 1950, a basic educational structure for Ghana had emerged (see Figure 1.4). The existing structure of education at that time is rather confusing since it consists of a multiplicity of parallel programmes at the post-primary

level. One structure in widespread use provides for a six-year basic primary course followed by a four- year middle school course and five years of secondary education. This reflects the provision made by the Accelerated Development Plan for Education in 1951. A second structure, adopted in the years 1962-63, introduced a six-year primary course followed by a two-year middle school course and then a further two-year continuation school course. In both structures, at the end of the eight-years, talented pupils were selected on the basis of the Common Entrance Examination results for a five-year secondary education, while the remaining pupils complete a two-year continuation course leading to a Middle School Leaving Examination for which successful candidates were awarded certificates.

A third structure was introduced in September 1974 on the lines of a two-year kindergarten, a six-year primary course, a three-year junior secondary school course, to be followed by a selective two-year senior secondary course and a further selective two-year upper secondary course. A fourth structure, outside the public system, was a six/seven-year preparatory primary school system, which concentrates on the secondary school entrance examination for pupils. The second-cycle course consists of a four-year technical or vocational education and a 5-7 –year secondary course, which includes the Sixth Form. The teacher training programmes took two to four years for a Teachers' Certificate.

Figure 1.4: Ghana Evolution of the Structure of Education from Colonial Times up to 1950



Note: There is at present only one Technical School in the Gold Coast. It is in the process of conversion into a Secondary Technical School. Some of its former functions will be performed by the proposed Technical Institutes. Some of the work which will be carried on at the proposed College of Technology is at present done at the training schools of various Government Departments. All the remaining institutions shown in the above diagram are already in existence.

The educational structure developed gradually over the years and by 1950, this was how it stood.

Source: Gold Coast Govt., Report on the Education Department for the Year 1950-51, Govt. Printer, Accra, 1952, p.8.

The colonial structure functioned sufficiently well during its period until Internal Self Government was granted to the Gold Coast in 1951. Under the all-African Constituted Parliament, new educational policies were immediately introduced. The major features of the new policies were set out in a Parliamentary Plenary Committee Report called the Accelerated Development Plan for Education (1951) or ADPE for short (see appendix 12).

The aims and objectives of the ADPE were:

- Universal access to primary and middle school education at public expense. This policy was meant to correct existing imbalances between rural-urban, male-female and normal and handicapped children's education. Hitherto, (and surprisingly), no attempt had been made to give handicapped children any specialised facilities in the educational system. It was envisaged that a scheme of free universal education might regularise the socio-economic imbalances between the different sections of the society.
- An accelerated training of qualified teachers and administrators. This scheme was to turn out a large number of qualified educational administrators and teachers so as to cope with the expansion in enrolments and educational facilities.
- Expansion of the existing educational structures and, in many cases, the building of new ones to help accommodate the new enrolments.
- Education was made compulsory a few years later for all children of school-going age, although this aspect of the scheme was never truly achieved (Gold Coast, 1951).

The Arthur Lewis Report

Upon the appointment of Dr Kwame Nkrumah as leader of Government Business for the Gold Coast in 1951, he invited Arthur Lewis, a renowned West Indian economist, to the Gold Coast to report on the potentialities that the country had in the field of industrialisation. In that decade, it was thought that industrialisation seemed to be the best hope for backward

countries to break out of poverty and to set themselves on the road to economic prosperity. But as later events showed, it was not industrialisation *per se* which stimulated economic progress but rather, fundamentally, it was the human element in industrialisation such as the availability of technical skills and managerial 'know how'.

By 1953, a report on the Gold Coast and industrialisation, prepared by Lewis, was published. What Lewis said in the first part was nothing new to the people of Gold Coast. In brief, he listed some areas of industry such as fishing, cabinet and upholstery, brick and tile, pottery and food processing as viable industries on which the Gold Coast should concentrate. He dissuaded the Government from venturing into secondary and capital production industries such as electronic equipment and machinery manufacture.

In recommendation numbers 145 and 146 of Arthur Lewis's Report, the author has this to say:

> *African entrepreneurship is deficient in technical knowledge, in managerial capacity and in capital. Of these three, the easiest to remedy is the deficiency in technical schools and universities, or by placing Africans in foreign firms, at home or overseas, to learn the necessary techniques* (Lewis, 1953, p.10).

The response to these recommendations Ocran has observed:

> *In just over ten years from 1951-1961 Ghana achieved more in the field of education than in the half century of colonial rule. The building of schools and teacher training colleges was given top priority in Ghana's development plans. Most Ghanaians who, under the colonial rule, would never have seen the inside of a school were given some form of education. Primary, secondary and university education were made free … Scholarships were freely awarded to deserving Ghanaians and in some cases to non-Ghanaians for studies to equip them for positions at home* (Ocran, 1978, pp.34-35).

Stressing the provision for education as a means to fit Ghanaians for development, Nkrumah, in his book: *Dark Days in Ghana* stated that:

> *Ghana was going ahead. The Nation's economy was almost completely controlled by Ghanaians and our education planning was*

> *producing educated and skilled personnel to meet the demand* (Nkrumah, 1968, p.39).

Education at Independence

Ghana, an independent nation since 1957, has experienced profound transformation in every sector of its society after a fierce struggle and revolution against the United Kingdom. Tremendous developments and changes in its social, economic and political life have led to the formation of a new Ghana which is, at the turn of the Millennium becoming economically prosperous and socially integrated. Among these changes is an adaptation of the educative process from a colonial setting to an independent way of life. Many of these emerging nations have adapted their former colonial educational systems to their present needs by a process called ‘‘Africanization.’’ In this essentially socio-economic process, the aims of education are revised to meet the needs of the independent government and society. The organisation becomes more African-oriented and the system is administered by Africans rather than colonial Europeans.

By 1960 in Ghana, a special wing of the President’s Office was assigned the task of co-ordinating, and being responsible for all activities concerning development. In this programme, technical and vocational training were given top priority. During this period, technical schools increased from 5 in 1951 to 18 in 1960 (Nkrumah, 1968).

A significant event that marked a big change in Ghana’s educational development took place in 1958. In this year, a Curriculum Research and Development Unit, (CRDD), was established. Its function was to review, develop and prepare syllabuses for primary and middle schools. At these levels, the syllabuses taught were to be standardised, holistic and relevant to the children’s backgrounds.

One of the consequences of the establishment of the CRDD was that in 1960, a national survey was conducted to find out how best to establish provisions for education of

handicapped children. This survey was under the chairmanship of Mr. John Wilson, Director of the Royal Commonwealth Society for the Blind. Since that time, education for the handicapped became an integral part of the national system and was included in national development plans. This has caused improvement for those with special needs provision in the country as a whole.

Another achievement of the CRDD was the popularisation of certain subjects in the school curriculum. Science, in particular, was given prominence but regional subjects such as fishing, *Kente*-weaving, farming and carving were also introduced.

The most dramatic educational re-organisation in Ghana was, however, in 1973 (see appendix 13). The structure and content of education were reviewed against modernisation and the economic welfare of the nation. As a result:

- Kindergarten education was provided for all children aged 18 months to five years.
- The first cycle of education was to be free and compulsory and was to consist of six years of primary school after kindergarten and a three-year course in a junior secondary school. The curriculum for this scheme was designed to give skills, which would fit children for work if they were unable to continue with their schooling after the first cycle.

Commenting in 1977 on the nature of the new curriculum, the Ministry of Education had this to say:

> *The new educational structure aims at a type of curriculum that will make education both terminal and continuing. It will be terminal in the sense that it will orientate the pupil psychologically to his immediate environment and provide him with some basic knowledge and necessary skills that will enable him to earn a living in that environment* (GIS, 1977, p.342)

In schools, emphases were laid on 1) cultural subjects, science, and mathematics; and 2) on agriculture, practical and vocational subjects. These emphases were to lay the foundation for those who were academically oriented to continue into higher institutions, while at the same

time, provide opportunities to those who drop out of the school system to earn a living in the society having acquired the basic skills. This, however, is not always the case.

From the foregoing comments on Ghanaian educational policies, it could be said that the aims in high demand for education in Ghana differ from those attributed to those by Europeans. Deductively, the Ghanaian aims could be stated as:

a search for an accelerated strategy for development. In this search, education is seen, possibly, as the most efficient organised institution through which this goal could be attained. This attribute to schools as an institution is not peculiar to developing countries alone. On a global scale, the educational institution seems to have the same status:

> *In an age when mankind's potentialities for destruction have been enormously enhanced by such discoveries as that of atomic power, the most pressing human problem might appear to be: how can man exist? For many, however, there is another perhaps even more important and not unrelated to the first: in a technological age such as ours, how can man more truly live? And the answer to this second problem is to be found largely in the field of education* (UNESCO, 1952, P.9).

All this constituted a search for a system in which individuals can develop their talents in skilful manners so that they could employ these talents in useful productive processes.

Legacies of Colonialism and Neo-Colonialism

Western models of schooling, as implemented in this region, derive from the colonial experience. Here formal schooling has long been regarded as desirable and valued, while modern development, however defined, has been regarded as a goal to be sought. The expenditures required to implement national programmes of educational reform are substantial, but of more fundamental importance are their social and economic outcomes. It is here that evaluation research assumes considerable importance, for it addresses questions such as:

- Who benefits from educational reforms and programmes?

- What are the programmes and reforms to achieve?
- What are the actual consequences of these programmes and reforms?

(Cooley & Lohnes, 1976; Apple, 1978; House, 1980)

At the heart of all decisions for educational expansion and reform is the conviction that some schooling is preferable to no schooling, and that a government has the right to intervene in educational matters. Whatever constraints there may be on development in developing countries, it seems that in all developmental relationships, education is a key factor which significantly influences the progression of other sectors. This crucial position occupied by education in national development is stressed by many writers, (for example Coleman, 1960; Onwuka, 1971; Apple, 1978).

Although education has always played a vital role amongst sectors of development, it appears that its magnitude was not recognised by European administrators in Africa at least until 1938. The realisation of educating Africans in order to fit them for a modern economy was first pointed out by Lord Hailey in a book he published in 1938 (Hailey, 1957). In this book he argued that there was nothing wrong with the African faculty in respect to learning new technical skills. He asserted that the rationale held by Europeans that Africans were incapable of learning technical skills had less to do with Africans' capability than with the negative attitudes adopted by Europeans in teaching Africans (Nicholson, 1958). Such sentiments had, of course, been expressed by the Phelps Stokes Commission as early as 1925. Nonetheless, even in the 1950s, Africans were still being educated for the purposes of:

- being employed in non-specialised, low-paid clerical jobs within the modern sector;
- reading the Bible with reasonable understanding so that the gospel could be spread by a few literates to large numbers of illiterate pagans;
- being economically and socially acculturated in European values (Shattock, 1946, p.292).

These contrasted with the aims of popular education in Europe even in the nineteenth century where provision of facilities for educational opportunities expanded with the rise of urbanisation, the nation-state and related national systems of schooling. This period coincided with the industrial revolution. Furthermore, the objectives of traditional African education, were entirely different, being rooted in the needs of traditional rural and tribal societies (Brown & Hisketh, 1975).

The major aim of colonial education policy was to lead the African to an economic and social subordination:

> *According to Hobson, imperialism is the endeavour of the great controllers of industry to broaden the channel for the flow of their surplus wealth by seeking foreign markets and foreign investments to take off the goods and capital they cannot sell or use at home* (Hanna, 1961, p.3).

Africans at that time were unaware of the grand imperial plan and therefore demanded without question more and more of the type of European education exported to them. With respect to the area now known as Ghana:

> *Nothing impressed us more than the interest of the people of the Gold Coast in education. Practically every African who sent a memorandum or appeared before us, sooner or later started to discuss education. This interest, in our opinion, is as deep-rooted as it is wide spread. It does not spring solely from any mercenary assessment of material benefits but from genuine desire for learning itself* (Curle, 1970, p.92).

Even as late as 1948, the quest for European-type education in Ghana was high, without regard to local relevance:

> *By 1948 the position had been reached when in the colony and Ashanti approximately half of the children of infant-junior school going age and 20 per cent of those of senior-primary school-going age were at school* (Austin, 1970, p.8).

However, by early 1950s many African nationalist leaders began to question the relevance of their educational systems in relation to their national development. This process of assessment comes out clearly when Nyerere says:

> *Africa has not really given much thought to the problem of education. We know, or we think we know, that something called 'education' is a good thing. And all African States therefore spend a large portion of government revenue on it. But sometimes I suspect that for us in Africa the underlying purpose of education is to turn us into Black Europeans … our educational policies make it quite clear that we are expecting education in Africa to enable us to emulate the material achievements of Europe and America. That is the object of our activity* (Nyerere, 1975, p.5).

We need therefore to put into perspective the effects of educational policy in the colonial and post-colonial phases.

Colonial Policies and their Effects on Education

Ager nicely sums up the effects of colonialism:

> *The legacy that colonialism has left affects education and therefore social progress, the efficiency and effectiveness of internal government, and the relations of the African country with the outside world, including its immediate neighbours* (Ager, 1996, p.150).

British colonialism was not intended to change men's minds, and as ''trustees for the welfare of the native population'' (Loveridge, 1978, p.15), they treated their various colonies as discrete administrative entities and attempted to adapt their governance to indigenous customs and regulations according to the policy of indirect rule. Chiefs were used as intermediaries and the British depended on the advisory relationship between its political officers and traditionally legitimate local chiefs.

Education was one of the domains in which colonial policy and vision were most clearly evident. Official anti-clericalism did not exist in British educational policy, which was decentralised and consisted to a significant degree in supporting the missionary efforts that have been described above. The *laissez faire* British attitude encouraged rivalry between

Christian schools in British colonies, generating an awareness of formal education into the rural areas and leaving room for local initiative as a determinant of local educational expansion. There were 41,000 primary and 700 secondary pupils in the colony of the Gold Coast (present-day Ghana) in 1920. The British African schools used local language at the primary level and often fulfilled the image of a 'bush school' with poor resources and limited teaching capacity.

The British concern for adapting education to the African situation was formalised in policy statements, such as the following which, was issued in 1925 after the Phelps-Stokes Commission on African Education had made recommendations based on its study of Ghana:

> *Education should be adapted to the mentality, aptitudes, occupations and traditions of the various peoples, conserving as possible all sound and healthy elements in the fabric of their social life* (Fafunwa, 1982, p.23.)

In addition to this type of benign recommendation for adaptation for which the Phelps-Stokes report is well-known, Williamson (1979) points out that another theme of the report was perhaps politically more relevant – the importance of selective exposure to the values and education of white society, which if overdone could cause the natives to become disaffected and leave the land. From a functional point of view, it is important to recognise that these statements of policy were not as decisive in determining the types of schools which were successful as were the economic demands of the economies. The only significant type of labour demand in the non-industrial colonial system was for those receiving academic, not vocational or technical, qualifications. Therefore, this is the type of education that instrumentally-motivated Africans sought (Foster, 1971; Datta, 1984; Antwi, 1992a).

In a very basic sense, innovations such as the JSS result from a re-assessment of the role of education in national development, a fundamental shift from the inherited structures of

selection, elitism and the advanced education of the few to basic education for the many. However, this type of reform predates the Jomtien Conference of 1990 and the shift of emphasis by the World Bank and other development agencies towards a generalist approach. It can also be seen as a neo-colonial legacy.

Self-Government and Education

In 1951, as indicated above, the first nationalist government led by Dr Kwame Nkrumah assumed office. In August of that year, the Nkrumah Administration introduced the Accelerated Development Plan for Education (Gold Coast, 1951); implemented in January 1952, it provided for the rapid development of education at all levels. A free-tuition elementary education for children between the ages of 6 and 12 was introduced and the post-primary system was reorganised on the basis of the Amissah Committee Report (Ghana Committee Report, 1963). The government continued to subsidise mission schools and to encourage local councils to establish their own schools.

The implementation of the Plan produced quantitative progress in the development of education. Within the period 1952-1957 primary and middle school places tripled; the building of technical institutes widened the field of technical education. There was a considerable increase in the number of available places in training colleges and secondary schools. More trained teachers and students entered universities, and a large number of students were awarded government scholarships to pursue further studies in law, medicine and the applied sciences (GOG, 1986; Braimah et al, 2014).

In spite of these efforts, there were a number of difficulties exacerbated by too few primary classrooms, plus the fact that the output of trained teachers at primary and secondary level was low and availability of secondary school places could hardly meet the growing demand. These factors led to an apparent fall in the standard of education owing to the

tremendous expansion in the facilities at the elementary level and the acute shortage of qualified teachers in the classrooms at the elementary and secondary levels. In the 1950s, the Seventh Standard School Leaving Certificate Examination was replaced by an internal assessment of Middle Form 4 pupils. Headteachers issued localised internal certificates popularly called 'Botsio Certificates' (so named after Kojo Botsio, Minister of Education at the time) to successful candidates. The pupils lost any motivation to work hard at their studies. Pupils, teachers and parents frowned upon these certificates because they were not derived from the results of a countrywide examination taken at the 'Hall'. They all much preferred the stamp of a nationally organised examination and its recognised certificates. From 1953, a countrywide Middle School Leaving Certificate Examination organised by the West African Examinations Council was instituted to replace the internal assessment of Middle Form 4 pupils. The change to national level assessment enhanced the quality of both the examination and the credibility of its certificates.

The quantitative progress nevertheless continued to affect all levels of education in the post-independence period. The number of secondary schools increased from 38 in 1957 to 59 in 1960. Sixth form classes also expanded. The Ghana Education Trust, which Dr Nkrumah set up in 1958, built most of the new secondary schools with £G2.5 million being provided by the Cocoa Marketing Board and over £G4.5 million by the Government. The number of teacher training colleges also increased. Both the Government and the Cocoa Marketing Board continued to award numerous scholarships to deserving students for local and overseas studies, the bulk of whom went to Western Europe (Graham, 1971).

In view of the increase in the number of training colleges and the shortage of adequate highly-qualified tutors, in 1958, the National Teacher Training Council was established primarily to look after the interests of teachers. The council was assigned the responsibility of

co-ordinating all forms of pre-university teacher education. This covered the examination and selection of students for teacher education, the content of teacher education, the examination and certification of student teachers, in-service training and research in education (GOG, 1967).

Following a decision taken in 1959, a Commission on University Education under the chairmanship of Kojo Botsio, Minister of State, was appointed to advise on the future development of university education (Government of Ghana, 1961). The upshot was that the two existing university colleges were granted full university status as the University of Ghana in Accra and the University of Science and Technology in Kumasi respectively in September and October 1961. A year later, the University College of Science Education was established at Cape Coast with a special relationship with the University of Ghana, and its students were initially awarded University of Ghana degrees. The University College was later charged with the responsibility of training graduate teachers for secondary schools, training colleges and polytechnic institutions. In 1972, it became a fully-fledged university and was named the University of Cape Coast. To promote and co-ordinate research activities, the National Research Council was established in 1958 and a year later the Ghana Academy of Learning was created to promote science and scholarship (ibid).

Free and compulsory primary and middle school education for all children of school-going age began in September 1961. The Education Act of October 1961 established the legal basis for compulsory education and also specified the role of local educational authorities (LEAs) and the organisation and position of teachers. Provision of educational facilities continued to be free throughout the system up to the tertiary level. Available statistics show that the number of pupils enrolled in primary and middle schools doubled between 1961 and 1966 (Graham, 1971). Within the same period, the number of students in secondary schools

doubled; that of training colleges tripled; that of technical institutes quadrupled; and the number of undergraduates in the three universities tripled (GOG, 1970). According to UNESCO statistics, the enrolment ratio for the first level of education in Ghana, embracing the ages 6 to 15, rose from 38 percent in 1960 to 69 percent in 1965. The corresponding percentages for the second level, embracing the ages 16-21, were 2 percent and 6 percent respectively and for the third level of education, embracing the ages 20 to 24, 0.18 percent and 0.65 percent respectively (UNESCO, 1971).

Set against these impressive developments was the apparent fall in the standards of education in the elementary and secondary schools due to the fact that the expansion of educational facilities was not matched by an adequate production of qualified teachers. Even more misleading, the introduction of a free textbook scheme was quite impressive on paper, but in fact never effectively worked in practice. Generally the books supplied were poorly handled over the years and were so few in number that students and pupils could not take them home. Moreover, there was a bottleneck at the secondary level; hence, many primary school leavers who could not gain admission through the Common Entrance Examination drifted into the towns to swell the population of the urban unemployed. In spite of the increase in the number of vocational-technical institutes, vocational education so urgently needed for the development of the economy had not received the due attention it required (GOG, 1967; Elbadwi & Ndulu, 2001; Boateng, 2012; Brewer, 2013).

With the overthrow of the Nkrumah regime in February 1966, the new military administration of the National Liberation Council appointed two bodies, which inquired into some aspects of the education system. The Mills-Odoi Commission recommended the decentralisation of the management of secondary schools and teacher training colleges from the Ministry of Education to regional and district authorities. It proposed the establishment of

a Teaching Service Division of the Public Service Commission and improvement of teacher remuneration and other conditions of service. These revolutionary proposals were grudgingly implemented by officials (GOG, 1967). The Education Review Committee appointed to carry out a comprehensive reform of the entire educational system, streamlined education along the lines of the British system and upheld denominational supremacy and character-building as the central theme of education. Furthermore, private schools were inspected and boarding fees per term and fees for day students were standardised. The principle was established that scholarships should be awarded purely on the basis of merit (ibid.). In a Two-Year Development plan, published in 1968, the military junta intended to show its awareness of the need to integrate educational output and manpower requirements, and the need to improve the quality of education generally (Ghana Ministry of Information, 1968). Lastly, a special committee reviewed the proposals of the Interim Report of the Education Review Committee on the various subjects to be taught as well as other administrative matters in the three Ghanaian universities.

The Busia Administration, which assumed power in August 1969, presented its plans for education in the One-Year Development Plan. The government placed emphasis on the need to expand secondary schools to absorb the increasing number of middle school leavers and to strengthen the secondary level in order to facilitate university expansion. At the same time, an effort was made to diversify the curriculum with introduction of practical subjects such as commerce, agriculture, metalwork and domestic science, which were to be accorded parity of status with traditional academic subjects. The government planned to open many secondary schools, which would provide technical and agricultural courses. During a period of nearly two years, the Busia Administration continued to re-appraise its education policies prior to announcing a new educational structure (GOG, 1971; Little, 2010). The Busia government

must be credited for taking a bold step in introducing the Student Loan Scheme for undergraduates in an effort to cut down educational expenditure.

The National Redemption Council headed by Colonel I. K. Acheampong, which in January 1972 replaced the Busia Administration in a military takeover, also made some contribution to the development of education. Riding on the crest of student support following the abolition of the Student Loan Scheme launched by the previous regime, the new government mobilised students from the universities, training colleges and secondary schools to undertake community projects such as the construction of irrigation dams at Dahwenya and Okyereko and the harvesting of sugarcane at Komenda and Asutuare.

Arising from this development, in 1973, the government established by decree (NRCD 208) the National Service Secretariat whose purpose was to assign, for a period of one year, a core of young trained Ghanaian graduates from the universities and the diploma colleges to any area of national development which urgently needed their skills at any time (MOE, 1974; Akyeampong, 2010).

The 1974 Education Reform

The principles which constituted the rationale of the 1974 ‘New Structure and Content of Education’ reform programme were as follows:

The principles which constituted the rationale for the 1974 'New Structure and Content of Education' reform programme were as follows:

- every child should have 18-24 months of preparation and predisposition before beginning free and compulsory formal education beginning at the age of 6 for a period of 9 years;
- throughout the entire pre-university course, emphasis should be placed on the acquisition of practical and manual skills, the development of leadership qualities, of self-reliance and

creativity, through physical education, sports and games, and cultural and youth programmes, and the study of Ghanaian languages, science and mathematics;

- teacher education should be geared towards the objectives of the new reforms and the schools should be readily accessible to all, meaning that they should generally operate on a 'day' schedule as opposed to boarding institutions.

For the achievements of these reform objectives, the Government decided on a new structure for basic education which comprised the following: pre-school education of 18-24 months for age group 4-6, and a basic first cycle education of six years primary plus three years junior secondary. This basic education package was made free and compulsory for all.

Sector	Duration	Age
Kindergarten	2	4-6
Primary School	6	6-12
Junior Secondary School	3	12-15

Compiled by the researcher

The medium of instruction for the first three years of the primary course would be the main Ghanaian language spoken in the area, with English learned as a subject on the curriculum from the first year of school and taking over as the medium of instruction from class IV onwards. French could be introduced into the primary course at the appropriate level and if conditions permit.

At the junior secondary school (JSS) level, the curriculum was to comprise: a Ghanaian language; a modern/classical language; English; French; Social studies; Mathematics; General science; Cultural studies; Physical education; Agricultural science - including poultry and livestock keeping; Home science and pre-nursing; Youth programme. In addition, two practical subjects would be selected from the following: Woodwork, Masonry,

Metalwork, Technical Drawing, Pottery, Commercial subjects, Marine science, Automobile practice, crafts, Beauty culture (including Hairdressing), Tailoring, Dressmaking and Catering (GOG, 1974; Anarfi & Appiah, 2012).

Provision was made in the reform programme for teachers to attend an in-service training course at least once a year and for a teachers' Resource Centre to be established in every district to facilitate the improvisation design and production of teaching materials, research work, and regular meetings of teachers. It also made provision for the establishment of the Ghana Teaching Service (now the Ghana Education Service) to establish professional teaching standards and to generate a high degree of motivation among teachers (MOE, 2002; Salifu & Abenyega, 2013). Due to the shelving of this report, the system remained selective for more than a decade, but the 1974 documents must be seen as a precursor of the key reform of 1987 which actually brought the JSS into being (GOG, 2004; Little, 2010; Sakyi, 2015).

Furthermore, the regime in 1974 approved proposals for a new structure and content of education. The major characteristic of the report was the emphasis placed on vocational, practical and technical subjects throughout the entire pre-university course. A second feature was the shortening of the duration of pre-university education from the old maximum of 17 years to 13 years to enable the government to realise savings on educational expenditure. In 1975, a start was made to implement the new structure and content of education, which was expected to come into force in the period 1980-81. A new teacher education programme was introduced to prepare specialist teachers over a period of three years in three subject areas in 24 post-secondary teacher-training colleges. In addition, six colleges were assigned to offer diploma courses over a three-year period for teachers in home science, art, physical education, science education, music, agricultural education, technical education and Ghanaian languages (Asare, 2011; Sakyi, 2012).

The Junior Secondary School as a Neo-Colonial Legacy

Of course, as the Junior Secondary Sector in Ghana emerged from the 1974 reform it is very interesting to observe that at that time this sector was being introduced in a large number of developed and developing countries.

And that the origins of the junior secondary sector in general lie in the emergence of extended primary schools in England, and other forms of post-primary provision in developed countries such as the Junior High Schools in the USA. Because of the colonial connection with Britain and that country's neo and post-colonial relations with its former territories overseas, brief mention will be made here of this international context only in relation to derived and disseminated models of schooling at this sectoral level. In England, the extended primary schools survived the introduction of selective secondary education in 1902 because of the demand for them. The relevant age group involved in England became absorbed in the various forms of secondary schooling to emerge from the 1944 Education Act, some of which (e.g. central schools) had been created by certain LEAs in the inter-war years (1919-39). But the issue of transition from primary to secondary schools re-emerged within the fundamental reorganisation of secondary education in England from 1965 (Bell et. al, 1973). A significant number of Local Education Authorities opted for various forms of 'middle' or 'junior high' schools forming a new sector between the first schools and the high schools. This was of course costly in terms of staffing and facilities, and became the focus of educational research and discussion (Hargreaves & Tickle, 1980; Broadfoot, 1979; Gorwood, 1984).

Not surprisingly, the idea of junior secondary schooling emerged as a parallel but not unrelated issue in newly independent former colonies of Britain, and especially in the Caribbean which was the focus of considerable educational aid through the relatively new Ministry of Overseas Development (to become known as ODA and now DFID) created by the

Labour Government in the mid-1960s. Assistance was given to the creation of a junior secondary sector in Jamaica (Jervier, 1977), and this became a model for other Commonwealth Caribbean territories (Brock, 1984).

However, this trend could be seen as a neo-colonial influence not only in terms of a metropolitan exemplar, but also in respect of aid and development policy. It is not surprising therefore to find that the 1974 education reform in Ghana included a commitment to 9 year of basic education, three of which would be provided in a 'junior secondary school'.

The Interface between Indigenous and Colonial Attitudes to Education

The British were associated largely with the development of educational systems that were "culturally adapted" to the African environment. However, the situation was more complex than this, and a considerable gap often existed between official policy statements concerning education and the actual evolution of the systems themselves.

Emphasis in most educational documents throughout the late nineteenth and early twentieth century was on the provision of basic elementary education in the "three Rs" and training in elementary industrial arts or agriculture (Foster, 1965). The inclusion of manual subjects in the curricula of the schools was to be stimulated through the provision of special per-capita grants; and, indeed, before World War 1, the Basel Mission in particular had developed a very extensive system of industrial and agricultural training. Certainly, during this earlier colonial period there was little enthusiasm for the development of post-primary academic-type education, and this was associated with a general view that metropolitan education was not suited to local Gold Coast conditions (Foster, 1971).

In practice, however, the schools tended to develop along increasingly academic lines as a result of African pressures. In the view of educated Africans, educational parity with the metropolis was the real issue. To them, academic schooling provided an essentially

'vocational' education in that it gave access to the most remunerative and prestigious jobs within the emerging colonial occupational structure. Moreover, it provided opportunities, however limited in number, for a minority of Africans to proceed to higher studies in the United Kingdom. It is not surprising therefore, that the first academic secondary schools created in the Gold Coast were the result of African and later missionary enterprise while government made only a relatively late entry into the field in 1923 with the foundation of Achimota College (Foster, 1971; Braimah et al, 2014). For all practical purposes educational planning in Ghana had been firmly in African hands since the early 1950s.

Goals of the1987 Reform

The major goals of the 1987 reform programme were:

to increase access to basic education;

to improve the quality of education;

to make education more relevant to socio-economic conditions;

to ensure that the reform programme could be sustained on national resources after the adjustment period (MOE, 1990).

Among the principles that formed the basis for the reform package in basic education, were:

- the basic right of every Ghanaian to be able to read, write and function usefully in society; this had been legislated as far back as 1961;
- the need for every Ghanaian to participate in the economic development of the country;
- the need to equip the Ghanaian child to understand the modern scientific and technological world;
- The usefulness to the Ghanaian child of:
- acquiring a sense of cultural identity and dignity and

- being aware of his/her environment (ibid.)

The reform also sought to:

- Contain and partially recover costs;
- Enhance sector management and budgeting procedures through a merger of planning, budgeting, monitoring and evaluation functions;
- Decentralize decision-making and supervision from the region to the district and circuit levels, and increase the level of school visitation and supervision;
- Withdraw feeding and lodging subsidies from secondary and tertiary institutions (ibid.).

In 1986, government had as a basis for the reform policies the report of the Education Commission (which was based on the 1974 report), and the five-year development plan for the implementation of the reforms submitted by the Conference of Directors of Education on behalf of GES. In line with the major recommendations of these reports and the framework of the Education Structural Adjustment Programme, government began to restructure pre-university education to meet national educational objectives (Folson, 1995; Little, 2010; Inkoom, 2013).

The ongoing education reform movement in Ghana assumed that to achieve effective education of children, parents must be motivated and involved. Community participation was the key (Asare, 2011; Essuman & Akyeampong, 2011). Second, the movement was convinced that in order to break down the barrier between society and the school, at least in the early years, the maternal language must be the medium of instruction. Third, it attempted to make schooling more relevant and more useful to the life of children in differing socio-economic environments. Finally, the movement was designed to improve pedagogic efficiency without increasing costs (ibid.p.25).

The overall aim was to ensure a much wider access to a more useful basic education, more rooted in national and local culture. Of significance to the theme of this thesis is the attempt to ensure a significant shift in educational resources provided by government from the rich to the poor, and the attempt in basic education to ensure that children develop a manual as well as a mental literacy: that is to say, the vocational dimension (Matlay, 2001; Akyeampong, 2010; Anarfi & Appiah, 2012; Apeanti, 2015).

Though in 1989 it was still too early to evaluate the impact of these reforms, they had already resulted in a dramatic increase of more than 10 percent growth per annum in primary school enrolments during the first two years of programme implementation (Sakyi, 2015). This rapid quantitative progress was the result of a conscious decision to defeat the opponents of reform, with the strategy being to implement the new structure on a nation-wide scale and solve practical problems afterwards. To the extent that the new system is in place, there has been some success. However, a prime objective of this thesis is to evaluate the qualitative record of this new system.

Components of the 1987 Reform

The 1987 reforms set out to increase access to education at all levels, to improve quality of education, diversify the curriculum by introducing technical and vocational subjects, and shorten the duration of pre-tertiary education from 17 to 12 years for all pupils. These changes were conceived to correct an educational system perceived as elitist, and which downgraded technical, vocational and agricultural education (Anarfi & Appiah, 2012).

The strong sentiments expressed by Dzobo (1973) were not sufficient to implement the new structure and the content of education did not change the attitude of the majority of the public and the educational establishment. The elitist nature of the ‘colonial’ educational

system was set by the Common Entrance Examination, which like the English ‘11 plus’ favoured the more academically prepared and socially advantaged.

By the eve of the 1987 Educational Reforms, the Dzobo Committee's recommendations had only been partially implemented. Middle Schools that had become JSS numbered 118. By converting Middle Schools into JSS, the GES in effect abandoned the elaborately designed structures that had been planned for the JSS due to financial constraints. The few JSS that were built according to the original design were later converted to Senior Secondary Technical Schools (GOG, 1996; Anarfi & Appiah, 2012).

Without new Senior Secondary Schools to enter, the products of the experimental JSS were not particularly welcome in the old type secondary schools. They were variously admitted into Form 2, Form 3 or Form 4 of the 5-year secondary school (GOG, 1986; MOE, 2002; Eshun, 2013).

The reforms made the JSS the common route to secondary education for all primary school pupils. Entry into the JSS was automatic for all products of the primary school. The Common Entrance Examination ceased to be the selection mechanism for admission into the secondary school.

This chapter of the thesis has provided background information needed to understand the national and educational environments in which they are being studied. Early education efforts were dominated by missionaries in Ghana, and the British encouraged them to expand and manage the Gold Coast schools. Interestingly enough, educational planners in this system recognised that schooling was divorcing people from their African environments and attempted to institute alternate training centres. But the prestige and rewards associated with academic diplomas overrode the practicality of technical, vocational and commercial education during the colonial period. Following independence, Ghana greatly expanded its

educational system, though it maintained its inherited colonial curricula and structure. Recognising the inappropriate nature of this model of education to its Africa-centred social goals, it undertook reform in the mid-1970s. It was unsuccessful due to various reasons. The next chapter turns to a review of contemporary Ghanaian education and discusses the basic structures as they function in the Ghanaian educational system.

Chapter 2

A Review of Contemporary Ghanaian Education

Economic and Social Overview

Ghana has often been characterized as the 'beacon on the African continent' (World Bank, 1993). It was the first African country to gain independence from colonial rule, in March 1957, and under the charismatic leadership of its first President, Dr Kwame Nkrumah, it provided inspiration and critical material support to a range of African nationalist movements across the continent. Imperialism and neo-colonialism were forcefully repudiated, and Pan-African socialist ideas captured the centre-stage in development thinking. Despite its role as the 'black star' of Africa (ODI, 1996), Ghana also pursued at various times economic policies that with hindsight have proved to be self-destructive (Toye, 1991).

Ghana's economic growth dropped to 4.3 percent in 1999, and rose again to 5.4 percent in 2000 (Economist Intelligence, 2000; World of Information, 2000; Buren, 2002) Economic growth slowed in 1999 as a result of low international prices for both the country's main exports, gold and cocoa, but at 4.3 percent it still remained robust. On a more positive note, under the new HIPC initiative, Ghana would qualify for a debt write-off package. This could reduce its total debt burden by as much as 30 percent and potentially could agree with the IMF, given that the government had adhered to most of its recent structural adjustment programme targets (Economist Intelligence Unit, 2000; Hutchful, 2002).

Ghana with a population of about 28 million (World Bank, 2017), GDP growth is effectively to have slowed for the fifth consecutive year from 3.9% in 2015 to 3.3% in 2016 due to implementation of tight fiscal monetary policies. Growth is projected to recover to

7.1% assuming restoration of energy supply, new hydrocarbon wells coming on stream (ADB, 2017).

Ghana's economy improved in the first half of 2017, after substantial fiscal slippage in 2016. The fiscal deficit for the first half of 2017 was 2.7% GDP on track to meet its target of 3.5% of GDP. Its economy expanded for the third, successive quarter in March 2017 to 6.6% up from 4.4% the previous year. The industry sector recorded the highest growth of 11.5% compared to 1.8% in 2016 with significant contributions of this from mining and petroleum. The agricultural sector grew by 7.6% up from 5% the previous year as a result of good yields in the crops, fisheries and cocoa sub-sectors (World Bank, 2017).

Education becomes useful only if it leads to physical, economic, social and other developments for improving the quality of life for individuals, their communities and the nation at large. For a developing country like Ghana in a rapidly changing world economic environment, education is therefore seen to be at the heart of national development.

The Contemporary Context for Educational Development

The term 'contemporary' in respect of Ghanaian educational development will here be taken to represent the period since 1987 when the reform with which subsequent chapters are concerned was enacted.

Ghana's current development strategy is based on private sector export-led growth. In view of the vulnerability of her traditional exports and limited potential of these as the source of sustainable wealth creation, the strategy requires that Ghana must diversify into non-traditional exports particularly manufactured goods and services. Success in this direction requires a skilled labour force to adapt to rapidly changing technologies, including knowledge about product contents, characteristics and markets.

The IMF and the World Bank are the key players in the provision of assistance for the implementation of reform policies in Ghana. Both institutions recognise education as a cornerstone of economic growth, alongside social development as the principal means of improving the welfare of individuals, and also that within this, basic education is its foundation. Inadequate basic education undermines not only the process of human capital development but also the entire development process. On that account, it is generally agreed by the World Bank that there is the need for sustainable basic education in countries such as Ghana, hence its core support of the FCUBE initiative discussed below.

There is also considerable evidence that one of the pillars of the East Asian 'tiger' phenomenon was the development of human capital involving the formation of engineering and science related graduates (Becker, 1993; World Bank, 1998/99; UN, 2000; Morrissey, 2001; Matlay, 2001; Lawrence & Thirtle, 2001; Burnett & Jayaram, 2012). These formed the core of the pool of human capital, which attracted foreign investment and enhanced the ability of these countries to compete internationally. Consequently the development of secondary and tertiary education, especially in engineering and other science-related disciplines, was and is seen as crucial for the success of Ghanaian development. In a way, it is seen as a West African 'tiger', or at least potentially so, though this is relative in the extreme as compared with Taiwan or South Korea. Nonetheless, investment in schooling was reckoned to be a key element in their success and that must be recognised by Ghana if she aspires to be a West African 'tiger'.

It is therefore encouraging to observe that, since the launching of the education reforms in 1987, the Ghanaian government has significantly increased the recurrent budgetary allocation to basic education in particular, and to education, in general. The allocation to the education sector increased from a low of 17 percent of the national recurrent budget in

1980/81 to a little over 35 percent in 1987 and 40 percent in 1994 (Glewwe, 1996; MOE 1996). Within the education sector itself, basic education's share of the recurrent expenditure has risen from 44 percent in 1984 to an average of about 65 percent between 1989 and 1999 (Glewwe, 1999; MOE, 2000). The expenditures on Ghana's education as percent of GDP were 7.4% in 2005 and 8.1% in 2011 (World Development Indicators, 2015).

Again, within the same period, Ghana has received $400 million from the World Bank and other funding agencies such as the USAID, UNICEF, ODA (now DFID), and UNDP to support the implementation of education reform programmes (World Bank, 1998/99; Thompson & Casely-Hayford, 2008). A greater part of this support has been applied to basic education for the development of syllabuses and textbooks, the in-service training of teachers, the restructuring and strengthening of management, and the provision of infrastructural facilities such as classroom pavilions, furniture and bungalows for teachers and head-teachers (Gbadamosi, 1999; Thompson & Casely-Hayford, 2008). This should have enhanced internal capacity significantly.

Since the launching of the 1987 education reforms, there has been some improvement in various aspects of the education delivery system. For example, there is increased funding, improved infrastructure, increased teacher population and an improved pupil/student ratio. It cannot however, be denied that the system is still bedevilled with some problems which are magnified in the northern sector of the country in particular. For example in 2013 the Ghana News Agency (GNA) reported a disturbing situation in the Bunkpurugu/Yunyoo District in the North where 32 school buildings in the area were ripped off during rain storm. The District Assembly and the Ghana Education Service could not assist the re-roofing of the schools. Most of the schools in the area were over-populated with average of 120 pupils per class creating overcrowding, and also textbooks have been in short supply in schools in that district

(GNA, 2013). These problems must be seriously addressed if the vision of Ghana becoming a middle-income country by the year 2020 is to be realised.

Apart from being an important cog in the wheel for development, investment in education also plays a second role as a means of distributing the national cake more widely through further accumulation of human capital. In a society of limited endowment, with wide disparities in regional, district and individual income distribution, education provides a means of primary income distribution to reduce these wide disparities. Education enables the individuals or regions to accumulate human capital as a basis for participation in national production and development. It actually serves as a means for creating greater equality of opportunity in society (World Bank, 1995; UN, 2000; Agbemabiese, 2007; Allsop et al, 2010). In this regard, the northern sector of Ghana presents a case for special attention. Figure 2.1 illustrates the political geography of Ghana, according to regions.

Poverty in Northern Ghana

Ghana is still a relatively poor country in spite of the favourable picture being presented by the macro-economic indicators of success. The Ghana Living Standard Survey for 1987/88 showed that on the average, 36% of the population lived below the poverty line. The three northern regions constituted only 20% of the population; but they accounted for 60% of the hardcore poor (GSS, 1995). A 1992 survey showed that while there was some improvement, the proportion of the population living below the poverty line was still above 30 percent (Gbadamosi, 1999; UN, 2000; World Development Indicators, 2001). Not all the people living within the poverty zone can pay for the education of their children. There is therefore a need for a coping mechanism or safety net to be instituted to address the particular circumstances of such people to enable them to pay for their children or wards to attend schools at various levels.

Educational Conditions of the three Northern Regions

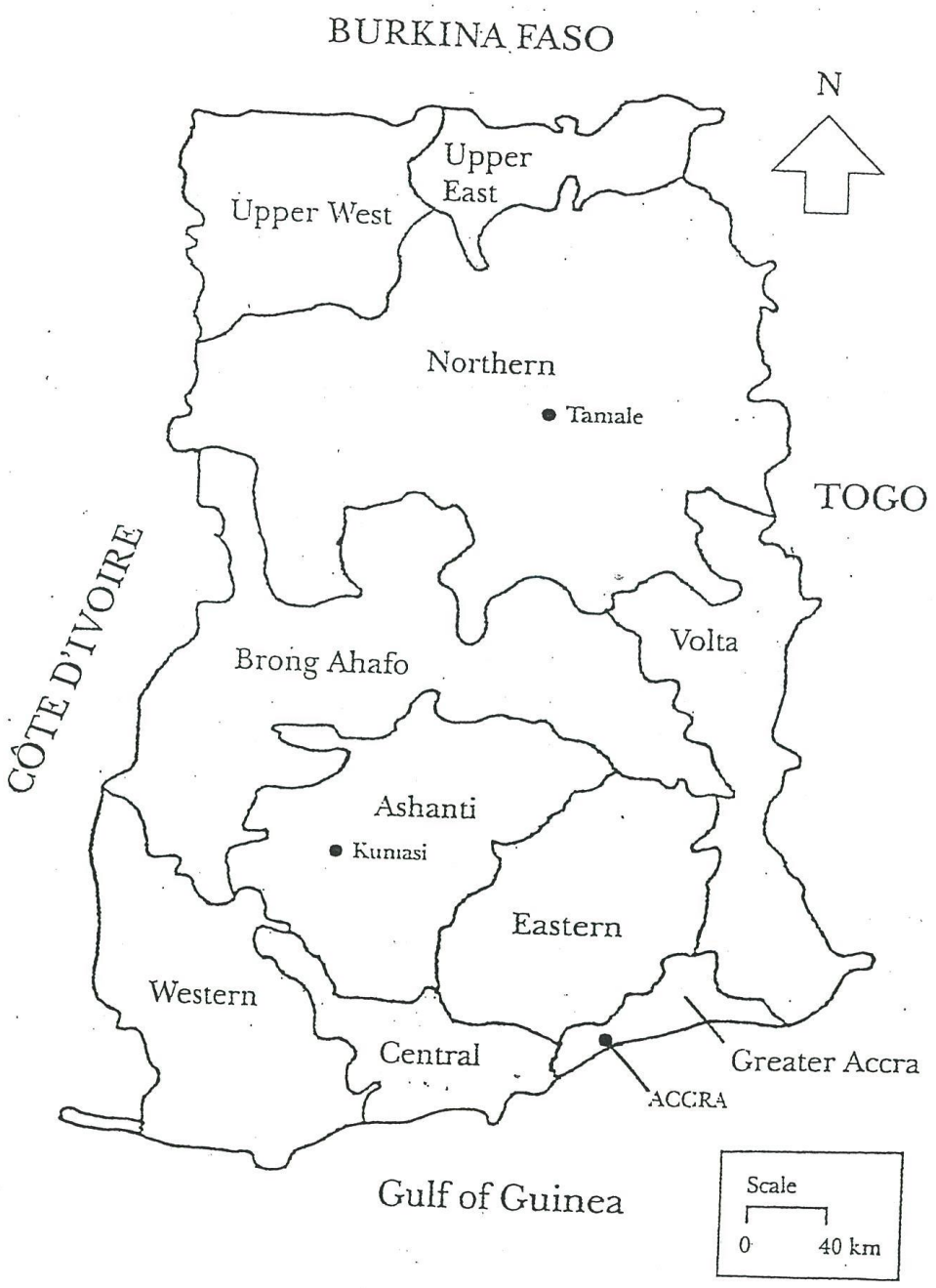
Apart from poverty, another factor which has had a lasting negative effect on the development of education in the North was the official British Colonial policy (Bening, 1990; Braimah et al, 2014). It was a policy of separate development from that of the South.

Under the policy, the North was to act as a "labour reserve" for the emerging economic sectors of the South that catered to the needs of Imperial British industry. According to Bening (1990), it was even argued that since the Northern Territories were engaged mainly in agriculture:

> *"their need is not a high academic standard but enough English education to carry on business and a practical acquaintance with such trades as will fit them to be useful members of the community"* (p.41).

Accordingly, as at 1929, whereas 'the colony' (i.e. the South) had 117 government and assisted schools, the Northern Territories had only five (Braimah et al, 2014). Currently the Northern Regions have 68 schools (Wikipedia, 2017).

FIGURE 2.1: GHANA'S ADMINISTRATIVE REGIONS



Source: The Economist Intelligence Unit Limited (2000)

The basis of the Northern Territories joining Ashanti and the colony for Independence, which ushered in modern Ghana was that special measures would be instituted to bridge the gap in development between the South and the North (Bening, 1990). In the interim the gap has become wider in some sectors and Northern Ghana trails behind the rest of the country with reference to almost every available indicator of educational performance. For example, as many as two-fifths (38.8 percent) of all Ghanaians aged 15 and above have never attended school. All the regions in Southern Ghana have better scores or scores that are slightly above this national average, but by contrast almost the entire population in the three regions in Northern Ghana (Upper East, Upper West and Northern) is illiterate. Over 80 percent of their people have never been to school (GSS, 1998, p.11). Currently literacy rate in Ghana is 76.6%; male literacy rate is 82% and that of female is 71.4% (CIA WorldFactbook, 2017).

If the levels of literacy are abysmally low for the adult population in Northern Ghana, the data on school intake and enrolment do not suggest that the gaps in literacy are about to be redressed. There is again, a strong correlation between region of origin, gender and age on the one hand and school attendance on the other. The gross intake rates and gross enrolment ratios for primary and junior secondary schools for period 1990/91 to 1996/97 are on the average higher for all regions in the South than the national average. By contrast, the average figures for the Northern regions are significantly lower than the national average (see Appendix 10). Overall, these gaps in school attendance are further magnified for the senior secondary and tertiary levels. For example, for the age group 16-18 reflecting the senior secondary school level, the overall national average drops to 57 percent for males and 41 percent for females. With the exception of the three northern regions, all other regions score well above the national average showing how the northern part of the country has been having a depressing effect on an otherwise promising national performance. However, a research conducted by

Yusif and Yussof shows some significant improvements, the Gross enrolment ratio (GER) in primary schools was 95.7% for the North compared with 95.8% for the South in the 2007/2008 academic year. The GER figures for JHS and SHS were 67.4% and 22% respectively for the North compared with 81.2% and 33.3% for the South (Yusif & Yussof, 2010).

The Education System

School System Structures

A quick note about terminology is essential before launching into discussion of the educational system. As this thesis is written in English, using the Ghanaian English language terminology for Ghanaian educational structures would seem practical and appropriate. When describing the various schools in their own context, the Ghanaian terms will be maintained in order to avoid artificiality and confusion. The terminology scheme found in Figure 2.2 will be used.

Figure 2.2: Terminology used to refer to levels of education in Ghana

Generic term	Ghanaian institution	Age range	Grade range
Pre-school	Kindergarten (Kg)	3-5	Kg. 1-2
Primary school	Primary school	6-11	P. 1-6
Middle school	Junior secondary school (JSS)	12-14	JSS. 1-3
High school	Senior secondary school (SSS)	15-17	SSS. 1-3
University	University	18-21	L. 1-4

Compiled by the researcher

2014-2015 academic calendar for Ghana (Primary & JSS)

Basically the Ghanaian school year was lengthened during the 1987 Education Reform Programme from 35 to 40 weeks and instructional time was increased from four to five hours

per day for both Primary and JSS (Asare-Bediako, Boachie-Danquah et al., 1995; Boeh-Ocansey, 1997; Asare-Bediako & Nti, 2014) when it was recognised that Ghanaian school children were receiving significantly fewer hours of schooling than even their immediate neighbours. But Adipah and others (1995) emphasize the fact that it is not only the time spent in school that counts, but rather the amount of time given over to quality learning that is crucial in determining children's opportunities for quality education. In their research recommendations, they state that:

> *only through careful controls, monitoring, management, and a tightening up of the rules and regulations concerning absences, tardiness, and the lax administration of many schools, will the children have the same chance at an education that other countries give their children* (Adipah, Dzinyela, et al; 1995:60).

The researcher's own observations confirm the need for 'tightening up' many aspects of the Ghanaian educational system.

Figure 2.3: 2014-2015 Academic Calendar for Ghana Primary School & JSS

Term	
1	18 September - 20 December 2014 (14 weeks or 68 days)
2	8 January – 10 April 2015 (14 weeks or 67days)
3	7 May – 25 July 2015 (12 weeks or 58 days
Total	40 weeks (193days)

Compiled by the researcher

The number of contact hours is considerably less than indicated by the academic calendar. Official holidays are not subtracted from the total, and it is not unusual for holidays

to start effectively a day or two before the official date. The importance given to examinations decreases even more the number of days of actual school attendance, since virtually nobody attends school after examinations are over, although the academic term may not be officially completed. In Ghana the educational system scheduled its national examination (BECE and SSCE) outside of the regular school year, and non-examination year students are thus not affected. Students are given a great amount of 'independent study' time. Therefore, 'independent study' has become a euphemism used to refer to class time, which is spent without a teacher, either because the teacher is absent or the teacher does not choose to teach or supervise the class.

During case study interviews, (discussed below), at all the three case study sites, JSS students often complained about excessive amounts of time given over to independent study, during which they are expected to remain quietly in their seats, or alternatively stated that one of the things they liked about school was when their teachers actually came to class! A World Bank report confirms this phenomenon, stating categorically that in Ghana ''there is a serious need for greater discipline among teachers in the public sector. The PPA reports absenteeism and very little actual teaching going on.'' (World Bank, 1995:59).

The country's education system currently comprises primary schools, junior secondary schools, senior secondary schools, polytechnic (technical and vocational) institutions, teacher training colleges, and university-level institutions (see Figure 2.4).

By 1975, Ghana had the most developed educational system in Africa south of the Sahara. The country had produced personnel of admirable quality especially geared toward the administrative machinery and public services. Training facilities for technical and vocational education for the middle-level labour force and school leavers did not expand much during

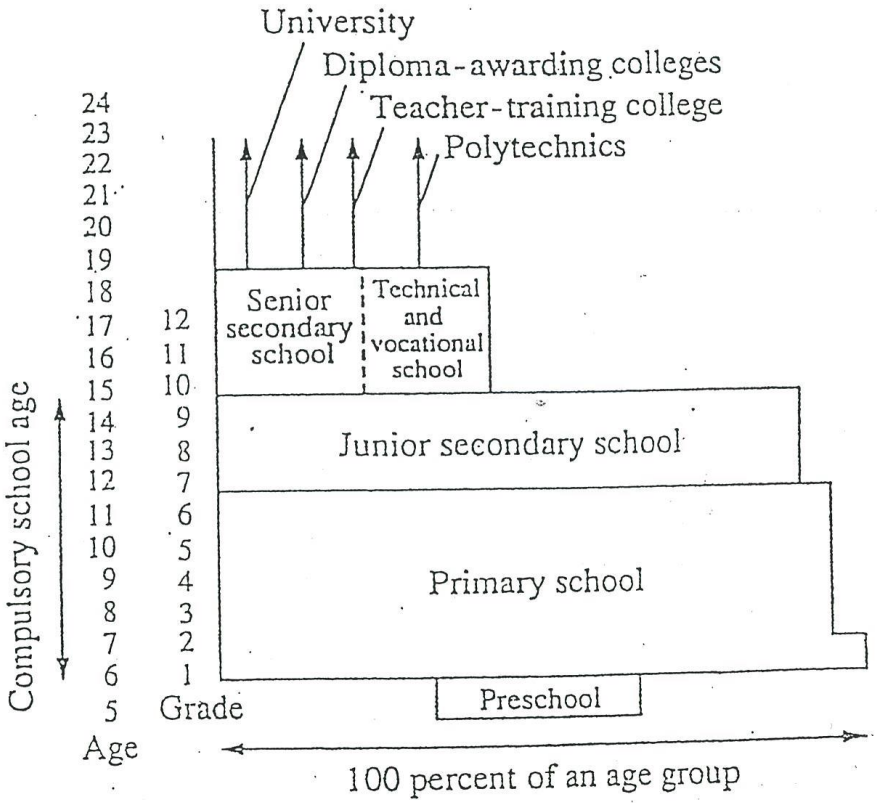
this period (McWilliam & Kwamena-Po, 1978; Anarfi & Appiah, 2012; Sakyi, 2012; Arthur-Mensah & Alagaraja, 2013).

The new three-year senior secondary school programme launched in 1991 was operating alongside the old system, which was eventually phased out in 1997. The new programme caters for various aptitudes in the technical, vocational, agricultural, business, and general education fields, and has a common core to meet the minimum educational needs of the students. The total enrolment in the senior secondary schools (old and new) in 1996 was 199,028, with an intake of 64,000 students for senior secondary Form 1. Based on a flow rate of 95 percent, the total enrolment for senior secondary schools has been projected at 332,213 by the year 2000 (MOE, 1999; Sakyi, 2012).

Tertiary Sector Reform

Reforms involving the tertiary sub-sector were launched in 1988. Between 1988 and 1993, a revamping, re-capitalisation, and expansion of facilities at the tertiary level of education were taking place in the hope of ensuring sustainability. A system of cost-sharing between the government, local communities, parents, students, and institutions was being implemented.

Figure 2.4: Ghana: Structure of the Formal Education System



Source: Dwomoh, Y. (1995) 'Ghana' in T. N. Postlethwaite (ed.), *International Encyclopaedia of National Systems of Education*, Pergamon.

Course structures were adjusted to accommodate working persons and viable linkages between different types of programmes within the sub-sector have been provided. In response to the increased student population at pre-tertiary level, the tertiary system has been expanded to include all post-senior-secondary institutions (MOE, 1996; GOG, 2004).

Before 1987, higher education was available only in the three universities in the country – the University of Ghana in Accra, the University of Science and Technology in Kumasi, and the University of Cape Coast in Cape Coast – and a few non-university institutions. A number of Ghanaian students also received higher education abroad, especially in Europe, the USA, Canada, Australia, and the former Soviet Union. Admission to any of the three universities in Ghana is based on performance at the GCE A-level examinations. This has been replaced by senior secondary school examination since 1997. The total enrolment for the three universities was 26,500 in 1999 (MOE, 2001). Facilities for higher or tertiary education are being expanded to consist of the existing four universities, the existing seven polytechnics, the seven diploma-awarding colleges, the teacher training colleges, and other post-senior secondary school institutions. Indeed, the polytechnics and the teacher training colleges have been regrouped to be known as ‘‘Regional Colleges of Applied Arts, Science and Technology’’ (RECAAST). It had been projected that 10 percent of the senior secondary school graduates would be admitted to the universities from 1994-95 onwards, which should have increased the (1990-91) total enrolment of 10,689 at the universities to nearly 27,000 by the year 2000. Enrolment in the diploma-awarding colleges, together with the RECAAST, was scheduled to increase from 20,923 in 1990-91 to 56,513 by the year 2000 (MOE, 1999; Sakyi, 2012). Figures are not yet available to test the degree of success in attaining these targets, because of financial obstacles as a result of insufficient funds from the central government.

The Education Situation

Basic education consists of six years of primary-level education and three of junior secondary education that is supposed to be tuition free and compulsory. The results of the 1992-94 national Criterion Referenced Tests in BS6 showed how serious the problem of quality schooling is at this level: fewer than 5 percent of the students tested demonstrated command of English Language and Mathematics at acceptable levels of achievement.

The proportion allocated to basic education rose from 44 percent to 65 percent in the last decade. However, even with the anticipated efficiencies that will result from the reforms proposed as part of the FCUBE initiative, (discussed below), in the short-run, the Government cannot afford to increase further its resource allocation to basic education without causing unacceptable funding shortfalls and development problems in other sectors. Consequently, full implementation of this important strategy is dependent upon the availability of loans and grants to make up the revenue deficit in addition to the steps planned to increase the cost efficiency of Government of Ghana (GOG) outlays (Hutchful, 2002; MOE, 2002).

Since 1987, the Government has received approximately $400 million in education loans, grants and sector credits from international donors. Annualised donor contributions constitute 9 percent of the overall education budget and 15 percent of basic education expenditures (Thompson & Casely-Hayford, 2008). In designing this strategy, the Ministry of Education has identified a number of cost-saving reforms that are expected to bring greater cost-efficiency to the delivery of basic education services. Savings realised from these actions will be used to help offset the increased costs of expanded access and activities leading to improved quality.

The Government of Ghana has remained the major source of funding for basic education in the country. Consequently, education has increasingly taken a larger share of the

national budget. For example, in 1984, education accounted for 20 percent of total recurrent expenditure of the government. This has steadily increased over the last ten years to about 40 percent. Over the past ten years, a number of donor agencies have made significant contributions to basic education. District Assemblies have also made sizeable contributions to education.

The FCUBE Programme

The Government of Ghana has in its national framework for socio-economic development, made education the pivot of its development plan in a nation-wide, long-term initiative to expand, strengthen, and make more relevant its basic education system.

Government, in its desire to keep faith with the 1992 Constitution, has given education the prominence it deserves through the introduction of Free Compulsory and Universal Basic Education (FCUBE) as a complementary approach to support the reform programme initiated in 1987. The ultimate goal of the reform programme is to ensure that all children of school going age have access to education as well as establishing an efficient management system that will provide quality educational services and these efforts require the support of all Ghanaians.

The FCUBE initiative is the Ministry of Education's response to a constitutionally mandated charge: Article 39 (2) of the 1992 Constitution of the Fourth Republic of Ghana, which states:

> ‘‘*The Government shall, within two years after Parliament first meets after coming into force of this Constitution, draw up a programme for implementation within the following ten years, for the provision of free, compulsory and universal basic education.*’’

This programme for 'Free Compulsory and Universal Basic Education' was launched in 1996 with the World Bank as a prime mover. Seen from the Bank’s perspective the structure of the programme and its proposed implementation is documented in the *Staff Appraisal Report of*

24 May 1996. This report, among other things, details the First and Second Education Sector Adjustment Credits which closed on 31 December 1991 and which focused on the reform process at the basic level (Primary and JSS). Further credits, some involving other sectors and issues such as senior secondary schools, adult literacy and vocational training in the informal sector, were agreed and commenced implementation in the early 1990s.

The main external support of the period 1996-2001 is, and will continue to be the Basic Education Sector Improvement Credit (World Bank, 1996) which is funding the start-up of FCUBE within the Basic Education Sector Improvement Programme (BESIP). This aims to achieve free compulsory and universal basic education by the year 2005 (Government of Ghana, 1996a). Of immediate interest to this study is the first phase (1996-2001) which is documented in *Operation Plan - Document 1* (ibid.).

So the Government of Ghana recognises basic education as a fundamental building block for development and is committed to providing free, quality education for Basic Stages 1 through 9 to all school-age children in the country by the year 2005 (GOG, 1994; Akyeampong, 2010; Allsop et al, 2010).

The Vice-President, Professor John Atta Mills giving a keynote address to mark the golden jubilee celebration of the Labone Secondary School in Accra in December 1999 sums up with the following words:

> *By allocating 35 percent of the national budget to education, the government has reaffirmed its commitment to creating a suitable environment for the development of the country's human resources. Vision 2020 initiative requires that the country pay attention to its human resource needs as the most important factor to secure a place among middle-income countries* (Daily Graphic, 1999).

Basically, according to the FCUBE documentation, at present the basic education system of Ghana suffers from *three principal weaknesses*:

- Access to basic education services is not available to all citizens;

- Quality of education in many Ghanaian schools is insufficient to impart sustainable literacy and knowledge, skills and habits required for full social and economic participation in society;
- Efficiency with which fiscal, material and human resources are utilised in the educational process is low and their allocation and management are in need of reform.

The reforms and activities planned under FCUBE address each of these key areas in multiple, but carefully integrated ways, over a ten-year period, and comprise:

- teaching and learning (curriculum reform and review, teacher education and re-allocation, instructional materials development and performance assessment);
- management for quality assurance (efficient utilisation of staff at school, circuit, district, regional and national levels);
- broadened enrolments (across regions and gender);
- infrastructure development (construction, rehabilitation and modernising);
- cost and financing (resource re-allocation, elimination of redundancy, streamlining (MOE, 1996).

By taking on board the FCUBE basic education cycle of 9 years, the Ghana authorities have, in effect, abolished the junior secondary sector as a separate entity.

Special Needs Education

Education for the handicapped is available at all levels of education in Ghana. As of 1991, there were 17 special schools at basic education level with an enrolment of 1,935 – 11 schools for the deaf, 4 for the mentally handicapped, and 2 for the blind. There is 1 secondary technical school for deaf students with an enrolment of 51. The policy of integrating disabled students into mainstream schools is being pursued. Facilities have been provided for students

in 3 senior secondary schools, 2 teacher-training colleges, and the university of Cape coast to enable blind students to pursue higher studies (MOE, 1994; GOG, 2004).

These institutions exist at the nursery, preparatory, primary, middle and vocational levels. In terms of distribution, there is one school for handicapped children in each of the following regions: Central, Brong-Ahafo, Volta and Northern; and there are two each in Greater Accra, Western, Ashanti, Upper East; and five in Eastern. The total enrolment rose from 427 in 1970/1 to 1271 in 1981/2 (GOG, 1996; MOE, 1996). Subjects taught in the schools for the blind include braille, typing, music and a variety of crafts. The schools for the deaf teach arithmetic, reading, sign language, tailoring, sewing and other crafts (Corbett, 1998; Naylor, 2000).

One school for mentally retarded children comprising two preparatory classes and one nursery class is under private management. Furthermore, there are two schools for crippled children: at the Roman Catholic Orthopaedic Training Centre at Nsawam and St Joseph's Hospital School for crippled children at Koforidua.

Provision for special education in Ghana is based on cognitive, psychological, economic and social components. Activities initiated under these components are geared towards producing a whole person. The cognitive aspect takes care of the development of the cognitive ability whilst the psychological, economic and social components provide for the amelioration of psychological, economic and social needs of young people.

Two major principles, which should be briefly mentioned here, are the principles of the individualised curriculum and the interdisciplinary approach. The Principle of the individualised curriculum requires that the handicapped young person as a unique person should work within a specialised curriculum designed within the framework of the approved curriculum of schools in Ghana. The principle of the interdisciplinary approach implies that

the various dimensions of the personality of the disabled young person should be developed concurrently. Accordingly, special education needs a large team of specialists, the most important being parents who can best satisfy the emotional, psychological and social needs of their disabled offspring.

To support special education there are ancillary services such as hearing, assessment and resource services which are provided for the institutions established by the Ghana Education Service and manned by its trained personnel. Furthermore, two institutions train teachers for disabled young people locally. There is the Deaf Education Specialist Training College at Mampong Akwapim, which trains teachers for the deaf, while the Department of Professional Courses for Teachers of the Blind at the Presbyterian Training College at Akropong Akwapim prepares teachers for the blind (Anson-Yevu, 1985).

Assessment and Examination Policies

The Ghanaian educational system relies extensively on examinations for evaluation of student capacity and selection for further studies and other opportunities. Preparation for examinations is considered a prime activity and students in examination classes (JS3 and SS3) are given extra tutoring by their teachers as well as exemption from tasks such as cleaning the school compound in order to allow them to focus on studying. Private tutors who visit students at their homes once or several times per week are an unofficial institution in Ghana. Special preparation classes for the SSCE as well as the University Entrance Examination are offered, often at considerable expense. Parents are often compelled to send their secondary school children to different (sometimes less reputable) schools for a year following their failing certain subjects on the SSCE in order to prepare the subject (usually Maths, English or Science) for which their SSCE results were not satisfactory, after which they re-sit that portion of the examination.

The assessment system is based on the British model. Grades are determined by a percentage of correct answers on an assignment or test. The percentage corresponds to a mark between 1 (the highest) and 6 (the lowest). The students are tested in 12 subjects and assigned an individual score from 1-6 for each subject. These scores are then added together to form an aggregate score (lower is better) for national evaluation. For example, in 1996 the BECE examination tested 12 subjects and the West African Examinations Council (WAEC) stressed that any student with a score of 36 or less was qualified to enter Senior Secondary School. This means that students would need to have an average mark of 3 (approximately 50 percent) on each subject test to pass the BECE.

In any case, multiple-choice tests are used very often in Ghana, facilitating the marking of papers and institutionalisation of the use of percentage assessment systems. However, this format discourages the development of skills in written and creative expression, since students are not often required to synthesise, analyse or expostulate their personal understanding of a question but instead must choose the 'correct' answer from a set of possibilities. Some teachers and pupils interviewed during the fieldwork offered the opinion that the preponderance of multiple choice questions in testing most subject areas decreases the motivation of pupils to study - since one can guess and still have a 20-25 percent chance of finding the correct answer, pupils do not put as much time into mastering a topic as they would if they were required to explain the answer in their own words.

Thus in keeping with the recommendations of the Ghanaian Education Reforms Review Committee (ERRC), continuous assessment (CA) is a component part of determination of BECE and SSCE performance as well as promotion from class to class - it accounts for 30 percent and examinations account for 70 percent of the pupils' grades. Therefore, a minimum combined score of 40 percent (the criterion in this case) is expected for

a pupil to be recommended for the following class. The institution of continuous assessment means that Ghanaian teachers are required to keep CA records on each pupil, in which performance on class and homework are marked and recorded. Most teachers interviewed expressed the view that the principles underlying CA were sound and that the performance of pupils could be better judged in this manner than by relying solely on examinations. However, most teachers complained about the large amount of extra paperwork required by continuous assessment, and studies of the Ghanaian educational system depict that teachers are still in need of training and assistance in order to improve their assessment of pupils (Adipah, Dzinyela et al., 1995; Akyeampong, 2007). Given the resentment that some teachers feel toward the extra work, one may wonder about the reliability of CA record-keeping. And with the change toward use of CA documentation techniques under the ERP, schools stopped providing aggregate ranking of pupils' performance. In any case, this has made it difficult for parents, especially less-educated ones for whom the ranking was an indicator they could grasp concretely, to monitor their children's progress and thus take measures to correct problems before the national examinations occur (Korboe, 1995; World Bank, 1995a; Kabay et al, 2017).

Despite the fact that anonymous examinations are supposed to be the most 'objective' means of evaluating students, there are several types of examination corruption that have become more or less institutionalised in Ghana. Students at the secondary schools, which are considered elite, are often given homework and quizzes which strongly resemble the upcoming examination questions, which have been leaked to teachers at these schools or the students themselves. The elite students have practicing teachers as their tutors at home, and these teachers have a good if not certain idea of what the examination questions will be and prepare these students accordingly. Furthermore, in addition to helping the students with

examination questions, students who are truly unsuccessful but come from elite families can usually count on being able to buy their way into the best school, either through outright exchanges of money or through promises of favours by the well-connected. This kind of anomaly should be eradicated if real human capital development is to be achieved.

Teachers

As a matter of fact, teaching is no longer considered a prestigious profession in Ghana, although it certainly was when education was a scarce commodity and teachers were part of the well-paid corps of civil servants. Despite the deterioration of their status, teachers can still be seen to form a backbone of the modern economy, in that they train people in the basic skills of literacy and numeracy, which are fundamental to life outside of the farm. They also represent a large proportion of the number of government employees in Ghana (Bame, 1991; GES/UNICEF, 1995; UNESCO, 1998; Bediako & Asare, 2010; Salifu & Abenyega, 2013). In addition to the conditions of their work environment, the training and salaries they receive determine to a large extent their proficiency and motivation. There are 38 Teacher Training Colleges in Ghana, diploma courses at University Colleges in Winneba and Kumasi, and a B.Ed. degree available from the University of Cape Coast. And in accordance with the current focus on basic education, a Department of Primary Education was established at the University of Cape Coast to train undergraduate students in primary teaching methodology. Although short of the government's 90 percent goal, over 66 percent of all teachers had received some form of in-service pedagogical training by the mid-1990s (Adipah, Dzinyela et al., 1995). New teachers for the basic education classes of primary and junior secondary schools are employed by the Ghana Education Service each year after graduating from a 3-year post-secondary course at one of the teacher training colleges. Also, graduates from Cape Coast University comprise the basic teaching staff of the senior secondary schools. Since there

is still a gap between the number of trained teachers and the number of teachers needed, untrained teachers are recruited for many rural schools to which trained teachers often refuse postings. These 'pupil teachers' are not allowed to progress in the teaching ranks until they undertake some kind of training and have, under the educational reforms, been required to leave their positions, primarily in rural areas. The phasing out of non-professional teachers is seen as one of the most counter-productive aspects of the ERP, since national service personnel (who are usually equally untrained) are often used to replace the non-professional teachers instead of filling the substantial shortfall in full-time vacancies (Korboe, 1995; Bediako & Asare, 2010; Salifu & Abenyega, 2013; Asare-Bediako & Nti, 2014).

In spite of both more extensive and intensive structure of the Ghanaian teacher training system, TTC students have a generally low level of academic knowledge, and according to Adipah et al. (1995) can be traced back to poor mastery of the English language, which exists throughout the system. And to demonstrate their general level of academic knowledge, a group of teacher trainees were given the P6 Criterion Referenced Tests in both English and Mathematics. However, they scored between 80 percent and 89 percent on grammar, reading, vocabulary and writing sub-tests. Surprisingly, results on the P6 Maths CRT were even less encouraging - teacher trainees scored from 80.7 percent to 81.5 percent on basic number concepts, operations and story problems, but only 67.1 percent on geometry (Adipah, Dzinyela et al., 1995). In any case, a low academic level is a fundamental problem for Ghanaian schooling, thus affecting the quality of teacher trainees, which in turn affects the next generation of students.

Teacher Qualification and Salaries

Due to inflation, Ghanaian civil servant salaries are revised yearly: the 1999 salaries were increased by 20 percent from 1998 levels and 2000 salaries by 33 percent from 1999

levels. However, teacher salaries are still low, which is one of the main reasons that the field does not attract or keep the best candidates. Aside from credit facilities, there are few fringe benefits allocated to teachers.

The ranking of teachers is based on years of service as well as academic qualifications - degrees earned, with priority given (and strongly supported by the national teachers union - GNAT) to professional teachers who have received some form of teacher training. Thus no professional examinations are required, however participation in training seminars is required. Hence progress through the ranks is relatively automatic at the lower levels and becomes more discretionary as teachers progress further. Thus the Figure 2.5 below explains the grade and years of seniority required to pass to the next level:

However, statistics available through the Ghanaian Education Ministry do not break down the numbers of teachers in each qualification range but rather count the trained and untrained teacher in the system. These figures are given in Figure 2.6 below:

Figure 2.5: Teacher Ranking within the Ghana Education Service (GES)

Rank	Years needed to pass to next level	Comments
Teacher	5	TTC graduate starting point
Assistant Superintendent	3	
Superintendent	3	Graduate w/o TTC starting point Qualified to be head of first cycle school
Senior Superintendent	5	
Principal Superintendent	5 (but often longer)	Qualified to be head of second cycle school if holds university degree
Director		Must hold university degree

Compiled by the researcher based on interview data from Suhum District Education Office

Figure 2.6: Percentage of trained Teachers in Primary Schools (National and Regional Figures)

Region	Description	1987/88	1997/98
National	No of Teachers	65305	63689
	No of trained Teachers	37456	50964
	Trained Teachers as %	57.36	80.02
Eastern	No of Teachers	12479	9608
	No of Trained Teachers	7283	8204
	Trained Teachers as %	58.36	85.39
Greater Accra	No of Teachers	4884	6710
	No of Trained Teachers	3936	5115
	Trained Teachers as %	80.59	76.23
Northern	No of Teachers	3074	3870
	No of Trained Teachers	1037	2725
	Trained teachers as %	33.73	70.41

Source: Ghana Ministry of Education Report on Basic Statistics and Planning Parameters for Primary Schools in Ghana, 1987/88 and 1997/8, containing national and three regions (Accra, PBME and SRIMPR Divisions of MOE)

Figure 2.7: Teacher numbers in Junior Secondary Schools

Description	1987/88	1991/92	1996/97	Change	%Change
Public Enrolment (JSS1-JSS3)	610004	592867	695468	85464	14.01
No of Teachers	32612	33395	38016	5404	16.57
PTR	18.70	17.75	18.29	-0.41	2.20
Private Enrolment (JSS1-JSS3)		12893	42589	29696	230.33
No of Teachers		854	2401	1547	18115
PTR		15.10	17.74	2.64084	17.49
No of Teachers (Public)	32612	33395	38016	5404	16570588
Trained	22189	24064	31224	9035	4072
Trained as %	3.64	4.06	4.49	0.85	2343
No of Teachers (Private)		854	2401	1547	18114754
Trained		480	808	328	6833

Trained as %		56.21	33.65	.225534	.4013
Total Enrolment (JSS1-JSS3)		605760	738057	132297	21839838
No of Teachers		34249	40417	6168	18.01
PTR		17.69	18.26	0.57411	3.25

Source: Ghana Ministry of Education, 1999 (Accra, PBME and SRIMPR Divisions of MOE)

Undoubtedly one would need to compare teachers' rates of pay with those for comparably qualified people in other sectors of the economy in order to discern the attractiveness of a career in teaching in Ghana. But it would seem that, due to inadequate salaries, many of the most experienced and qualified teachers today leave the schools to find better employment elsewhere. Ghana faces a great deal of this type of wastage in the form of those who attend three years of teacher training college at government expense but do not actually teach for more than a few years. As Margaret Peil (1995) says (and confirmed by the observations of this researcher), diploma or degree-level graduates use teacher training as a stepping-stone to the university or other, more lucrative employment.

Summary of the Situation

Many types of tension existed in Ghana during the 1980s, mainly due to the negative effects of structural adjustment on the lives of everyday people. Falling income during the 1980s pushed some families to withdraw their children from school and put them to work instead. As their incomes fell, teachers were forced either to look for better-paying work. A team of researchers working for 'Education International' on the effect of structural adjustment on education have stated that the growing interest in education from the Ghanaian Government, as well as the World Bank, during the 1990s could probably be seen as a reaction to the negative effects structural adjustment policies had on the social sector, mainly education and health: also that different measures taken to develop education could be seen as attempts

to soften the impact of other elements of the structural adjustment policies (Brydon & Legge, 1996; Fredriksson, Fumador et al., 1998; Glewwe, 1999; Watt, 2000; Hutchful, 2002).

Hence the Ghanaian government undertook educational reform designed to restructure the concept of schooling within society at a time when society itself was being fundamentally re-ordered by structural adjustment. The process has been chaotic as well as dynamic, with many changes taking place at the same time.

In fact, the major transformation of the Ghanaian educational system would not have been possible without assistance from outside agencies. In 1986, Ghana became one of the first countries to receive World Bank funds for social sector projects, receiving US$218.07 million as of June 1996 from the World Bank alone. The Bank provided 80 percent of the external funds brought into the sector, but other donors have made significant contributions as well. The amount of funds injected (in the form of both grants and loans) exceeded US$400 million during the ten-year period between 1986 and 1996 (Fredriksson, Fumador et al., 1998; Glewwe, 1999). Hundreds of millions more have already been committed for the next phase of reform, which began in 1996. However, publicity concerning the reforms and the large sums of money involved sometimes has the effect of minimising the role that the government of Ghana plays in the process of development. On an annual basis, donor contributions constitute only 9 percent of the overall education budget, though donor emphasis on basic education means that their contributions make up 15 percent of that portion of the budget (Biervliet, Dubbeldam et al., 1996; Hutchful, 1995; MOE, 2002). Therefore, the Ghanaian government remains the largest source of financing for education in the country, and by the mid-90s was spending 40 percent of its recurrent national budget on education, with 65 percent of that amount allocated to basic education.

This culture, which affects everything going on within school walls, provides the 'hidden curriculum' of schooling, teaching students how social relations are truly and practically defined outside the realm of academic theory. Let us now turn to chapter 3 which discusses the post 1987 reforms with special reference to the junior secondary school.

Chapter 3

The Post 1987 Reforms with Special Reference to the Junior Secondary School

Introduction

Education systems and schools do not exist in a vacuum. They are embedded in their political, social and economic contexts. The following extract from ‘‘*Things you need to know about the JSS Programme’’*, published by the Ministry of Education and Culture, Ghana (1987) states: ‘‘Today’s world is a scientific and technological one, and the barest minimum education for every Ghanaian child must tune his or her mind to this fact, so that the children can understand and live competently in today’s world.’’

Of course, Ghana is a nation characterised by a limitation of economic and social opportunity with schools in general lacking sufficient materials, resources and funding. This situation has a strong bearing on and interrelationship with, other variables under consideration.

And for the majority of young Ghanaians the JSS represents the terminal stage of their formal education, as Peil (1995) observed:

> *Whereas it was assumed that in an expanding system parents would provide more education for their children than they themselves, in Ghana the process seems to have stuck at the middle school/JSS, with top-up vocational schooling if it is available and can be paid for* (p.304).

This situation seems to have been formulated by the advent of the latest national reform (FCUBE), which treats the first nine years of schooling as a simple sector (Akyeampong, 2007). The full implications of that for JS Schools will not become evident for some time. It could be that this sector, as it has evolved since 1974 will become a kind of

'fossil stratum' in the ongoing accumulation of educational reforms. Although the 1987 reform is the origin of the JSS as a new sector on the ground, the statement of a new secondary education programme in 2002 must also be noted and described.

The 2002 Presidential Committee on Review of Education Reform

During the administration of President John Agyekum Kufuor, he commissioned a committee popularly known as 'The 2002 Presidential committee on review of education reform' to review the whole education system in the country and make it more meaningful to the current world challenges. The committee was chaired by Professor Anamuah-Mensah, and the committee made the following recommendations:

- Universal Basic Education is now 11 years
- 2 years Kindergarten;
- 6 years primary school;
- 3 years Junior High School (JHS);
- After JHS students may choose to go into different streams at Senior High School (SHS) comprising General Education Technical and Vocational and Agricultural Training (TVET) or enter into an apprenticeship scheme with some support from the Government;
- A new 4 year Senior High School (SHS) will offer General Education with electives in General, Business, Technical, Vocational and Agriculture, options for entry into a tertiary institution, or the job market;
- Technical, Vocational and Agricultural institutions will offer 4-year courses including the core SHS subjects;
- The medium of instruction in Kindergarten and lower primary school will be a Ghanaian language and English. At the basic level emphasis will be literacy, numeracy, creative Arts and problem solving skills;
- Teacher Training colleges will be upgraded and conditions of service for teachers improved with special incentives for teachers in rural areas; Metropolitan and

Municipal and District Assemblies (MMDAS) will be responsible for the infrastructure, supervision and monitoring of basic, junior high and senior high schools;

- Greater emphasis will be put on ICT and Science and Technology
- A new National Inspectorate Board (NIB) outside Ghana Education Service (GES) but under the Ministry of Education Science and Sports (MOESS) shall be responsible for periodic inspection of Basic and secondary schools to ensure quality education;
- Free Compulsory and Universal Education (FCUBE) cost-sharing at senior high and tertiary levels will be maintained;
- Special needs education will be improved at all levels
- Education services will be widened to include library and information guidance and counseling and distance education;
- Private sector will be encouraged to increase its participation in the provision of educational services

It is worthy to note that this brings Ghanaian Education system in line with the rest of the world and not only the UK its former colonial master. It is the same system implemented in the US, Canada and others with slight modifications (Agbemabiese, 2007). The reform is to help both the government and parents save on education cost by reducing the number of years spent in basic and secondary schools (Thompson & Casely-Hayford, 2008). The introduction of Information Communication and Technology (ICT) into the curriculum of schools at all levels of education in Ghana is significant. Furthermore the inclusion of 2 years Kindergarten into the primary education system has been lauded by parents as well as stakeholders (Little, 2010; Braimah et al, 2014; Sakyi, 2015). This new education plan commenced in 2007 and its aim is to provide universal primary education by 2015 in line with the Millennium Development Goals (Eshun, 2013).

However, the education sector thus lacked the financial resources needed to expand education services and improve their quality. During the eight-year period to 1991, growth in real GDP recovered, allowing gains in real per capita incomes. Inflation declined, and the overall balance of payments position switched from deficit to surpluses, facilitating the elimination of external payments arrears and a build-up of gross official reserves (Hutchful, 2002; Thompson & Casely-Hayford, 2008). The strong recovery of public investment reflected the emphasis of Ghana's reform efforts on the rehabilitation and expansion of the productive capacity of the country after several years of neglect, as well as the importance attached by the authorities to improving the social infrastructure, particularly in the areas of education and health.

Real GDP was forecast to rise by 5.4 percent in 2000 with inflation running at 14.8 percent. If realised, these projections would be a commendable achievement. Ghana, nevertheless, faces a fresh set of problems that come on top of infrastructural and managerial barriers. Unfortunately, grants from donors show a sharp decline and the prices of the country's main exports – cocoa and gold have been weak (Elbadawi & Ndulu, 2001; World Bank, 2001; Buren, 2002; Hutchful, 2002; Thompson & Cacesly-Hayford, 2008).

Background and Reform

The Ghana Education Service (GES) was created in 1974 to ensure the effective implementation of reform initiatives so although the proposed school reform of that year did not take place, the creation of a new bureaucracy was significant. By 1983 however, the education system had sunk to such low levels that the need to salvage it was recognised by the government. This deterioration was due to a combination of factors. Successive governments had starved the education system of funds as a result of the general economic decline. Between 1975 and 1983 GNP per capita (in 1987 prices) declined by 23%. The percentage of

GDP devoted to education declined from 6.4% in 1976 to about 1% in 1983 and rose only slightly, to 1.7% in 1985 (World Bank, 1995a). As a result of this, and due to lack of foreign exchange, the majority of pupils and teachers had no textbooks and stationery items, and school infrastructure had deteriorated badly. Even more significantly, there was a general exodus of qualified teachers who had to be replaced by untrained pupil teachers, resulting in inefficient instruction at the basic education level, coupled with inadequate school supervision (Bediako & Asare, 2010; Inkoom, 2012).

The Government appointed an Education Commission, which proposed a modified version of the 1974 Educational Reforms, embodied in the *'New Structure and Content of Education in Ghana'*. The goals for the 1987 Reforms were strikingly similar to those of 1974. The Government accepted the commission's recommendations in October 1986, and set out to implement the new reform programme in 1987 (Agbemabiese, 2007).

Structural Reform

The reforms adopted a 6-3-3-4 structure of education; thus reducing pre-university education from 17 to 12 years. Replace the primary (6), middle (4) and secondary school (5) structure with primary (6), junior secondary (3) and senior secondary (3) introduce non-selective basic education across the primary and junior secondary stages (6+3), and (4) for university education. The rationale behind this decision was to reduce the opportunity cost of schooling to make funds available to improve both access and quality (Thompson & Casely-Hayford, 2008). Concern for quality influenced the decision to extend the school year from 35 weeks to 40 weeks and the school day from 4 to 5 hours. These changes were designed to increase teacher-pupil contact Primary School remained six years in duration. The three-year JSS was adopted for universal implementation. Basic Education was made compulsory for all children and was defined as 6 years Primary School and 3 years JSS (Akyeampong, 2010).

Senior Secondary School was to last three years; it was not divided into the two years SSS Lower and two years SSS Upper, which the Dzobo Committee recommended. All post-secondary education was classified as Tertiary education. The normal first degree was to last four years. Thus Polytechnics, Teacher Training Colleges, Agricultural Colleges and universities were to constitute the tertiary sector of education (Bediako & Asare, 2010; Sakyi, 2015).

JSS 3 pupils sit the Basic Education Certificate examination (BECE). Performance in the BECE determines admission into SSS. About 40% of the 'graduates' of the JSS were to enter the SSS. Without continuation schools the avenues for employable skills training for pupils whose formal education terminates at this stage are privately run apprenticeship programmes, under the NVTI, Technical Institutes, and the Integrated Community Centres for Employment skills (ICCES) (Boateng, 2012)

To encourage access, the Government made the first nine years of schooling tuition-free and compulsory for all children between 6 and 15 years. However, a cost-sharing element was introduced to ensure financial sustainability. Children were required to pay textbook user fees (c600.00) from P.3 onwards, sports fees (c200) and cultural fees (c100). Pupils in P1 and P2 were exempted from paying textbook user fees in order to make education more accessible to children in every part of the country (GOG, 2004)

September 1987 saw the wholesale conversion of all Middle Schools into JSS. Pupils in Middle Form 1 at the time became the pioneer JSS 1 class. The middle school was phased out yearly until three years later when the last batch of Middle Form 4 pupils took the Middle School Leaving Certificate Examination in 1990 (Sakyi, 2012)

Basic Education Curriculum

The curriculum in basic education was designed to achieve literacy and numeracy, and to impart appropriate knowledge of culture and practical skills. Exposure and hands-on experience in technical and vocational skills were intended, but the products of basic school were not to be qualified carpenters and masons as claimed by the more severe critics of the reforms (Sakyi, 2015).

At the beginning of the reforms, the Primary School curriculum comprised as many as nine subjects. Later, overloading of the curriculum was conceded by the Ministry of Education as a contributory factor to poor learning outcomes (GOG, 2004). The ERRC reduced the subjects to five (5) and six (6) in Lower and Upper Primary, respectively, to allow more time for the development of writing, reading and numeracy skills. These changes took effect from 1996.

The subjects taught at Lower Primary are English, Ghanaian Language and Culture, Mathematics, Environmental Studies and Religious/Moral Education. The Upper Primary curriculum comprises English, Ghanaian Language and Culture, Mathematics, Integrated Science (Science and Agricultural Science), Environmental Studies and Religious/Moral Education. Physical Education, Music and Dance are taught as physical activities (MOE, 2002)

The JSS curriculum was similarly reduced from 13 to 9 subjects. The subjects taught are English, Ghanaian Language and Culture, Mathematics, Science, Agricultural Science, Pre-vocational Skills, Pre-technical Skills (including Technical Drawing), and Religious/Moral Education. Music and Dance, Life Skills, and Physical Education are also taught but are not examined externally. (See Appendix 11 for details of school curricula).

The Kwapong Committee of 1966 made major local languages the medium of instruction in Lower Primary (P1-P3), as English became one of the subjects on the timetable. This is still the current language policy in basic education. English is the language of instruction after P3. Implementation of this language policy, though well intended and scientifically based, has been fraught with many problems especially in the urban areas because of the children of foreign nationals whose mother tongue may be different (GOG, 2004; Kabay et al, 2017).

Curriculum of the Senior Secondary School (SSS)

The SSS curriculum comprises a set of six core subjects, which all students offer and three elective subjects selected from one out of four programmes. The ERRC reduced the number to four namely: English, Mathematics, Integrated Science, and Social Studies. Elective subjects are selected from one of the following programmes:

Agriculture; General Arts and General Science; Business, Vocational and Technical. Details of these programmes are provided in Appendix 11.

Early specialisation and overloading of curricula were addressed by the ERRC. The issue of what the standard of the SSS should be relative to the "O" level was addressed. The Ministry decided that the situation where the core subjects are studied up to SC/GCE 'O' level standard and the elective subjects up to a level above the SC/GCE 'O' level but just below the GCE 'A' level should be maintained (MOE, 2000; Inkoom, 2012).

The originators of the SSS curriculum intended that agriculture, vocational and technical subjects would prepare students for the world of work also for further education. Universities do not recognise vocational agriculture as an adequate preparation for the more scientifically based agriculture they teach. Hence, for reasons of lack of equipment and teachers in agriculture, technical and vocational programmes, students in these options

suffered the double deficit of inadequate preparation for the world of work as well as limited opportunities for tertiary education. Their problems reveal the deep gulf in official thinking about the aims and objectives of second cycle education, and the deep attachment of the public to academic and liberal education perpetrated by the old type secondary school (Acheampong, 2009)

The curriculum was subsequently revised to comprise Mathematics, Science, Social Studies, Cultural Studies, Ghanaian Languages, English, Agriculture, Life Skills and Physical Education, at the Primary level. To these were later added Technical Drawing, Pre-technical Skills and Pre-Vocational Skills, (with French as an optional subject), at the JSS level – the final component of the nine year basic education programme. Thus in principle, pupils are being provided with the opportunity to become all-rounded persons who appreciate the use of their minds and their hands, understand their environment, appreciate their cultural identity and are in a position to discover their aptitudes and potential (Anarfi & Appiah, 2012).

Teachers for the Reform

Every pupil who enters Primary 1 is expected to go through the JSS course as a requirement, as it completes the nine-year Basic Education programme – 6 years of schooling at the primary level and 3 years at the Junior Secondary School level. The idea is that JSS can be terminal for those who wish subsequently to enter into apprenticeship, or can lead directly to upper secondary education for those who wish to pursue an academic course (Sakyi, 2012; Braimah et al, 2014)

In order to ensure that effective teaching and learning take place, the reform programme made provision for:

- teacher education to be reoriented so that it concentrates more on imparting skills rather than purely academic knowledge;

- the Government to provide sufficient quantities of textbooks and instructional materials for schools. For the use of these, pupils in classes P3 and above were to be charged a token fee;
- the local Ghanaian language spoken in any given area was to be used as the medium of instruction for the first three years of primary school. Pupils were however, expected to learn English and one other Ghanaian language during this period. English became the medium of instruction from class P4 onwards;
- untrained pupil teachers were to be phased out and replaced by professionally trained teachers in an effort to improve the quality of teaching;
- trained teachers were to be given in-service training to update their teaching methodology;
- substantive and qualified headteachers/headmasters were to be appointed for all Basic Education schools, and for such heads to be given in-service training in management to make them more effective in running the schools;
- qualified persons to be appointed as Circuit Supervisors to improve inspection and supervision of schools. Each circuit supervisor was to have not more than 20 schools within his/her jurisdiction.

Finally in order to achieve sustainability of the reform programme, basic education was made the joint responsibility of both local communities and the Central Government: the community – headed by the District Assembly, was expected to provide the school infrastructure while the government provided teachers, textbooks and other instructional materials (Bediako & Asare, 2010; Asare, 2011; Sakyi, 2012).

Another major component of the 1986/87-reform programme was the decentralization of education management, to which we will now turn.

Decentralisation of Education Administration

The Decentralisation Law

In 1988, the Government passed a Local Government Law (PNDCL 207), which created 110 districts and established District Assemblies as the highest political authority in each District. Among the functions assigned to these District Assemblies was the responsibility for building and maintaining school facilities. To enable these assemblies to carry out their new responsibilities, they were given revenue-raising and taxing authority. Twenty-two Implementing Departments and Boards of Central Government Ministries were established as Departments of the District Assemblies. Education was one of them. This law was subsequently consolidated by the Local Government Act, 462, (1994).

In pursuance of the Local Government Law, and in conformity with profound changes in the structure and content of education envisaged under the reform programme, the Ministry of Education undertook a major restructuring of the sector in order to ensure more effective co-ordination and management of the school system, as well as to make the sector responsive to the Government's new political programme of decentralisation (Zame et al, 2008)

The New Educational Governance Structure

The Ministry of Education set the tone by restructuring itself. At the apex of the new structure was the Ministry of Education (MOE), which is now structured as follows:

The Minister of Education is at the head of the administrative structure. Then two Deputy Ministers and a ministerial advisory committee. The Chief Director of the Ministry reports to the two Deputy Ministers, and supervises four core divisions, each of which has its own Director. These are:

- Planning, Budgeting, Monitoring and Evaluation (PBME).
- Manpower Development, Training and Personnel Policy and Management.

- Statistics, Information Management, Public Relations and Research.
- General Administration and Finance Division.

Also reporting to the Chief Director are the Director General of the Ghana Education Service, the Secretary for Higher education, the National Co-ordinator for non-formal Education, and other sub-vented organisations, such as the Ghana Academy of Arts and Sciences and the Ghana Book Development Council (MOE, 2002; Bottery, 2004; Zame et al, 2008).

The Ghana Education Service (GES) is the technical arm of the Ministry, and its purpose is to assist the Ministry in the policy-implementation process, in monitoring activities and in the management of the education system in general. It comprises both professional teaching and non-teaching staff. The GES operates at the national, regional and district levels. It is structured as follows: At the head is the Director General of the GES, who has two deputies – one for academic matters and the other for administration. These Deputy Directors supervise 10 line directorates as shown in Figure 3.1

There is one more line directorate, namely the Administration and Finance Division, however it reports directly to the Director General of the GES, rather than to one of the Deputy Directors. The Accounts Section comes under this line directorate. The line directorates in their turn supervise 22 divisions, which are headed by Assistant Directors

Figure 3.1: Deputy Directors' Line Management

Deputy Director (Academic)	Deputy Director (Administration)
Curriculum Research and	Inspectorate Division
Development Division	Manpower and Training
Basic Education	Supplies and Stores
Secondary Education	Regional Directorates
Teacher Education	District Directorates
Special Education	

Source: Researcher's Fieldwork

Education. These are illustrated in the GES organogram in Appendix 14. For the purposes of this study however, the units supervised by the line directorate for Basic Education are abstracted below:

- Preschool Unit
- Technical and Vocational Unit
- Agriculture and Environmental Education Unit

Through its decentralized units at regional and district levels, the GES manages first and second cycle institutions throughout the country. There are ten regional directorates and 110 district directorates. The regional directorates are required to co-ordinate the activities of the district directorates upon which many responsibilities have been devolved in the process of decentralization. The District Education Offices are structured as follows:

At the head is the District Director of Education. Under him/her are 4 Line Assistant Directors of Education, in charge of:

- Budget and Financial Administration/Controls
- Planning Monitoring, Data collection, Research and Records
- Management of Personnel, Schools, Manpower Training and Development
- Supervision and Management of Teaching and learning, Guidance, Counselling and Inspection

Each of these ADEs supervises a number of Principal Superintendents, who share the functions inherent in each of the four main line schedules, as listed above, and who in their turn supervise the administrative staff. Reporting to the Assistant Director in charge of Supervision and Management of Teaching and Learning, are all the Principal Superintendents who handle curriculum schedules, such as Agriculture, Environmental Studies and Culture. Circuit Supervisors also report to this Assistant Director. The responsibilities of Circuit

Supervisors are to supervise school heads and teachers of primary and JSS schools, and to ensure that effective teaching and learning take place, and that discipline is maintained in schools. The only officers beneath the rank of Assistant Directors, who do not report to the Assistant Directors but directly to the District Director, are the Principal Internal Auditors (Bottery, 2004; Zame et al, 2008; Essuman & Akyeampong, 2011; Baird et al, 2016).

The structure of the various levels of the education management system can be examined in greater detail in the organogram in Figure 3.2.

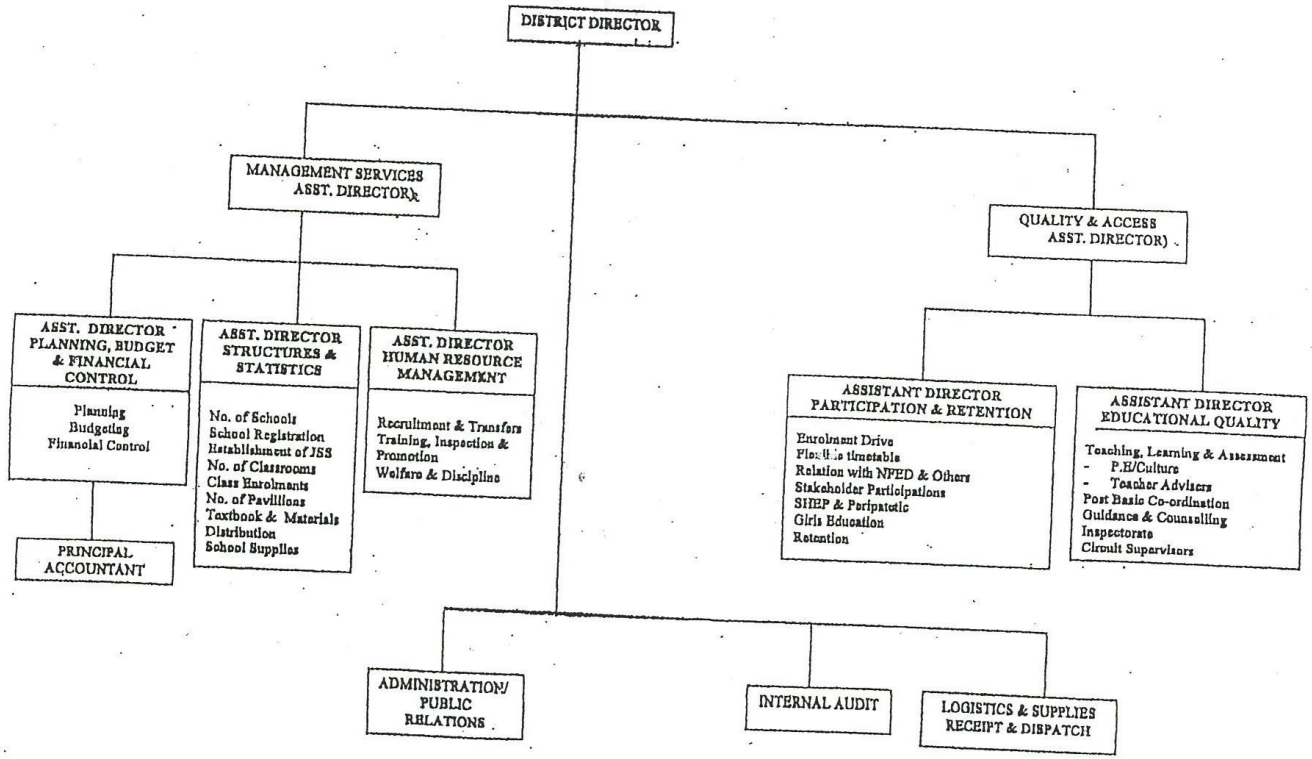
Optimising the Impact of the New Management Structure

To ensure that the qualitative change sought by the Government and the donor communities would be brought about, a prime objective of the decentralisation exercise in relation to education administration, was to significantly strengthen the District Education Office in order to make District Directorates more effective in managing and administering education at the local level. Consequently, under the Education Reform Programme, the responsibilities and authority of District Directors of Education (DDEs) were greatly extended. This re-organization assigns to the DDEs responsibility for:

- the management of all schools, GES personnel and teachers in their districts;
- the supervision of school management, teaching, learning and guidance services throughout the district;
- budgeting and financial control over schools and institutions within the district;
- collection and analysis of statistics and data for all schools within the district – such records should be made available to regional and national levels when required;
- the appointment and posting of Heads of Primary and Junior Secondary Schools;

- intra-district transfers of non-teaching staff holding grades of up to Administrative Assistant/Assistant Accountant and analogous grades – to be cleared with Regional Directors;
- the submission of recommendations for the setting up of Boards of Governors and for the appointment of Heads, Assistant Heads and Senior Housemasters of Senior Secondary Schools, to Regional Directors.
- For the effective implementation of these responsibilities the following conditions have been established:
- the District Education Office has been made coterminous with the political administrative districts;
- officials appointed to the office of District Director are expected to be of high calibre with relevant qualifications and proven competence;

Figure 3.2: Proposed Organogram for the District Education Office



Source: MOE (1998) Ministry of Education, Accra: Ghana

- such persons are required to undergo orientation training in management prior to their assumption of duty;
- District Directors are to be supported with a full complement of staff including four Assistant Directors, competent Circuit Supervisors (who should be provided with motor cycles, typewriters, etc.) and accounting staff headed by a Principal Accountant. This supporting staff should help the Director ensure effective supervision and management of schools, as well as proper financial management;
- District directors have been given free hand to manage their districts, and Regional directors of Education have been left with a principally coordinating role;
- District Directors have been provided with vehicles to ensure mobility, and their offices have been equipped with radio communication systems to enhance communication with the central administration.
- orientation and in-service training courses are being organised for operators in the education field – Directors, Assistant Directors, heads of Institutions, Circuit Supervisors etc., to ensure that they understand the import of the Education Reforms and the decentralisation exercise;
- as a further step in the strengthening of the district education offices, Circuit Monitoring Assistants, one for each district, have been designated and appointed as District Monitoring Assistants;
- District Depots have been created to facilitate the distribution of educational materials and equipment to schools (GES, 1998; Asare-Bediako & Nti, 2014).

Leadership, Consultation, and Participation during Implementation

A National Planning Committee for the Implementation of the Reforms was created after the forum of February 1987. Although its membership was supposed to be made up a cross-section of the population, the Committee was not truly representative of the associations from which members were drawn. None of the key institutions or constituted bodies in the field of education was directly or formally represented. These groups were not invited to nominate committee members. Instead, the reform leaders selected individuals. For example, they appointed university lecturers to the committee, claiming these individuals represented the university, even when that was not strictly the case (Antwi, 1992a; Eshun, 2013).

The reform leaders argued that time constraints and the need for rapid implementation – within the short space of one year – required that they select those who shared views consistent with the reforms. They needed a cadre of officials dedicated to the course of change if government was to be seen as credible by the financial institutions lending support. Thus, as one critic summarized, ‘‘bureaucrats became apostles for the propagation and implementation of the reforms.’’ (Amenuke, 1993).

The reluctance of Ministry and GES personnel to express critical views can be inferred from the lack of public discussion about two significant events in 1993. Primary school test results (Criterion Referenced Tests-CRT) and secondary examination results (Senior Secondary School Certificate Examination) provided ample reason to believe that the reform was not providing the expected outcomes. The CRT indicated that 95 percent of the sixth grade pupils had not mastered basic skills in Mathematics and English. But this was not officially announced in Ghana when the results first came out. Also, 95 percent of the candidates who sat the Senior Secondary School Certificate Examination in 1993 (the first cohort of secondary students in the reform) failed to qualify to take the university entrance

examination. This was made public only by a non-governmental, non-educational body, the Institute of Economic Affairs, in June 1994.

Public Information Campaign

An important feature of the education reform was a systematic widespread campaign to inform educators and the public. In 1987, several months after the Secretary's pronouncement of the reform, government organised a forum for stakeholders and other groups to air their views. Participants included the Ghana National Association of Teachers (GNAT), the National Union of Ghana Students (NUGS), the Trade Union Congress (TUC), the Conference of Heads of Assisted Secondary Schools (CHASS), and the Ghana Education Service (GES). This forum was intended as a campaign to inform these groups about the rationale and structure of the reforms, not to get their input or suggested amendments (MOE, 2002; Acheampong, 2009; Eshun, 2013).

As part of the public information campaign, in 1986 the National Planning Committee held a seminar at the University of Science and Technology at Kumasi. Representatives from all district administrations and groups such as revolutionary organs, churches, professional groups, and the Ghana Education Service participated. The aim of this seminar was to sensitise and inform these representatives of the objectives, structure and implications of the reforms so that they could, in turn, educate their membership.

Another dimension of the public information campaign was use of mass media-newspaper articles, radio discussions, television programmes – and meetings with leaders and members of church groups and other organisations. *The Ghanaian Times*, a daily government newspaper, for example, devoted its back page to information and updates on the reforms. Officials at all levels of the Ministry of Education and the Ghana Education Service used public gatherings such as durbars, speech and prize-giving days, Open Days, and other

community meetings to educate people on the reforms. One problem emanating from the involvement of political figures in the education drive was that some, in their revolutionary zeal, did not always accurately present the reform to the people. This led to distortions and misrepresentations among the very large illiterate population (Agbemabiese, 2007; Eshun, 2013; Sakyi, 2015).

Outcomes of the 1987 Education Reforms

In the light of the evidence and results subsequently emerging from the reform process, this section examines government and public responses to the policies and implementation strategies adopted in the reform and how they have given rise to a new cycle of policy analysis. It is of course a function of this thesis to present additional empirical evidence generated by the researcher, and this is provided in chapter 6.

The education reform of September 1987 was not fully in place until December 1993. By this time, the former middle and secondary school structures had been replaced by the new junior and senior secondary structures. In the 1994-95 school year, the first cohort of the reform was eligible for university admission. Entrance of this cohort into the universities was preceded by structural and curricula modification of the universities' programmes between 1991 and 1993 (MOE, 2002).

Learning Outcomes

The Ghana Living Standards Study (GLSS) Results

This study indicated that in 1988/89 i.e. at the beginning of the reforms, many pupils in P6 (with 6 years of primary school) could not read and were barely numerate. The GLSS found that only 32.5% of the population above 8 years of age were literate (GLSS, 1989).

The Avotri Study

This study was undertaken in 1991/92, of over 1000 pupils studying social science subjects – 700 following the old curriculum and 475 in the new JSS. The major conclusion was that students following the old curriculum fared significantly better than those following the new curriculum, in the various tests that were administered.

Among the identified causes for these poor results were:

- lack of learning materials;
- inadequacy of teacher-pupil contact hours due to teacher and pupil absenteeism;
- inadequate teacher training: the two-weeks in-service training to introduce teachers to new curriculum appears to have proved inadequate;
- lack of workshops, technical equipment and qualified technical teachers;
- an overly ambitious curriculum without a corresponding resource base (Avotri, 1993).

The confusion and anxiety that these results created among education officials and parents was enough to compel the government to call for a prompt review of the entire reform. The popular weekly, *The Statesman*, published the concerns of an eminent educator, Professor Djangmah, once the Director-General of GES (The Statesman, 1993).

Infrastructure

In Ghana the responsibility for providing school facilities rests on the district administration. The other sources of finance to cover capital costs are the local communities, religious organisations, and foreign donors. The reform of 1987 emphasised the responsibility of the district administration.

A process was initiated whereby the local communities contributed to the building of JS schools and workshops. Chiefs and community leaders, in coordination with departments of government, were to mobilise people for the task. Most communities had not done this by the

time the reform began. Their failure was due not to opposition to the programme but to their inability to find the resources to provide school workshops (for practical training) within the space of eight months. As a result, in September 1987, few communities had managed to provide workshops for their schools. Since the thrust of the programme was to depart from theoretical instruction, the absence of workshops made it much harder to offer practical training - a critical objective of the reform.

The central government provided the equipment and benches for these workshops. Every district received a grant of 10 million *cedis* to provide benches. A standardised design was adopted by the Ministry of Education and local carpenters contracted to produce them. But many did not deliver, and for those who did, there was often no workshop in which to put them (MOE, 2002; Agbemabiese, 2007; Asare, 2011; Sakyi, 2015).

Equipment

Some technical, agriculture, and science equipment was available in some schools at the start of the reform, but there was not enough to supply every school in order that all teachers could use the activity/discovery method of teaching emphasised in the curriculum of the new syllabi. Panels of experts selected basic tools needed for effective learning. Policy planners imported pre-packed and pre-labelled equipment for the schools. The World Bank Sector Adjustment Project provided technical and agricultural tools. About 7,000 kits were imported and supplied to about 5,260 JS schools, and a surplus was available for newly established schools (GES, 1987; MOE, 1990; MOE, 2002). The Overseas Development Agency (ODA) now DFID, provided science equipment. Here again kits were imported pre-packed. Each kit contained basic science equipment for use in exposing pupils to science and technology. Every school received a kit. The ministry solicited the help of the military, police, and other organisations to assist with the transportation of the equipment to the schools.

Capacity Building

In order to consolidate and strengthen the benefits achieved by the reform programme, a Planning, Budgeting, Monitoring and Evaluation Division was established in May 1988 at the Ministry of Education with financial support from UNDP. The division supports the sector-wide programme in budgeting, policy analysis, monitoring, collection and collation of statistical data and analyses, and medium-term planning. The new division:

- Established a statistical database for the whole sector, to form the basis for a comprehensive management system for the entire Ministry;
- Established a computer centre to facilitate the treatment and analysis of required data for policy decisions;
- Prepared courses on planning, budgeting, enrolment projections, manpower demand, and micro-planning;
- Organised seminars and workshops for the staff of the Ministry of Education and Ghana Education Service at headquarters, regional, and district levels in the fields of planning, statistics and budgeting (Ministry of Finance & Economic Planning, 1991).

Community participation in development projects has been part of Ghana's tradition since Independence in 1957. Schools, health centres, public toilets, markets, and drainage systems are constructed mostly through labour mobilised by town and village committees. Although Parent Teacher Associations (PTAs) have been set up in all public and private schools in order to raise development funds and mobilise community labour for school-related projects, members of the association are not involved in management issues of the school (Zama et al, 2008; Asare, 2011; Inkoom, 2012; Apeanti, 2015).

To get communities more involved in the activities of the schools and thereby sustain the reform, government took two giant steps. First, community leaders were expected, under the World Bank Primary School Development project, to participate in the selection of headteachers of their local schools. District Assembly Common Funds were created in all the

districts from which funds are utilised for, among other things, the construction and rehabilitation of school buildings. Decision-making on school facilities, equipment, and furnishing now rested primarily with the District Assemblies, which are composed of elected members. It was not uncommon to hear on Radio Ghana and read in the 'dailies', concerns and measures by communities to reduce school dropout rate, teenage pregnancies, as well as improvement in the quality of education (GES, 1998; Asare, 2011; Inkoom, 2012; Apeanti, 2015).

The effect of a heavy injection of foreign assistance in infrastructure led to the provision of over 1,000 pavilions for new JSSs. Under the USAID project, the weakest community in each district was selected and given a million *cedis* to improve its school buildings. As a result of improved financial standing through higher taxation and improved revenue collection, some district assemblies have turned their attention to renovating existing schools and building new ones to replace temporary structures. The number of classrooms at the primary level grew from 53,914 in 1988-89 to 58,230 in 1992-93.

However, the physical structures of both old and new schools are still in a deplorable condition. Most of the old structures have not seen rehabilitation for decades. One study found that 50 percent of the primary schools had inadequate classroom furnishings such as desks, chairs, and cupboards (Adipah, Dzinyela et. 1995). There was an attempt to build quarters for headteachers at some remote primary schools, but the village communities have questioned this policy. ''Why pay 10 million *cedis* to house one person when pupils and teachers must survive in dangerous classroom sheds open to the vagaries of weather? '' (Daily Graphic, 1993 p. 4).

Technical and Vocational Education and Training

Problems of unemployment among graduates of the Technical and Vocational Education and Training (TVET) system have been exacerbated by the economic and educational reform 1987 policies in Ghana, triggering off a policy reform of the TVET system aimed at employment creation, especially through self-employment, income-generation and poverty alleviation.

However, *vision 2020* (Republic of Ghana, 1995: 51) identifies the objectives of employment in terms of increasing productive employment, and sustaining a wages and salaries policy that promotes employment.

The Impact of Educational Reform Programme

An Educational Structural Adjustment Programme (ESAP) introduced in 1987 reducing the length of pre-secondary formal schooling from 12 to 9 years. After three years at the junior secondary school (JSS) level, candidates are deemed ready to enter training for the labour market, or proceed for further schooling at the secondary school (SSS) level.

Another major educational reform is the 'Programme for the Provision of Free Compulsory and Universal Basic Education by the Year 2005', the so-called FCUBE, introduced in 1994. This was to make primary education free and compulsory for all children.

The existing system of pre-tertiary education was judged to produce educated but unskilled and unemployed people who were suitable mostly for clerical and other office work. The changes were expected to raise the number and quality of youth with primary or secondary school education, before vocational and apprenticeship training. They were also to make them employable after completing either the JSS or SSS level.

The objectives of ESAP were:

- to reduce excessive emphasis on academic training at the pre-secondary level;

- to help young people discover their talents, aptitudes, potential, and appreciate the use of the hand and mind; and
- to make the youth more creative and production-oriented. A significant aspect of the reforms was the integration of general and technical/vocational education to inculcate in the individual an understanding of the world of work.

However, in practice, the reduction in the years of pre-tertiary education from 17 to 12 years triggered the arrival of thousands of young entrants into the labour market at a much younger age, without preparing them adequately for employment at either the JSS or SSS level. A report on the new system observed that after SSS, candidates were not adequately prepared to enter University (Education Reforms Review Committee, 1994; GOG, 2004).

Fewer than 10 percent of JSS graduates gain admission into the senior secondary schools and of these only about 2 percent are absorbed into higher educational institutions (MOE, 2001). The vast majority of JSS and SSS graduates look forward to some kind of vocational training for either formal or informal employment.

The Demand for Vocational Training

It is important to distinguish vocational training from other forms of skill training. The policy on VOTEC in Ghana (MOE, 1990) characterizes vocational education as that type of education designed to prepare skilled personnel at lower levels of qualification for one or a group of occupations, trades or jobs. The emphasis is on practical training at lower levels as part of an overall educational process. By contrast, vocational training aims at developing the particular skills for a specific occupation.

The demand for early skill acquisition to raise the employment prospects of the youth has been expressed in large increases in the numbers of vocational and technical training institutions and in the phenomenal growth of vocational graduates. It has been suggested that real prospects for employment are available to these graduates, but that these may be linked to the identification of markets as a support mechanism (Lauglo, 1992; Adam, 1999; King and

McGrath, 2002; Ziderman, 2003). Mead (1999) makes a similar observation from Zambian and Kenyan studies that an approach to education and training that is based on identified market opportunities is likely to be more effective.

Boateng (2012) notes that from 1960 to 1984, the number of VOTEC-trained professionals and semi-professionals increased from 17900 to 28700 and the number of skilled persons from these institutions rose from 5836 to 708800. Vocational enrolment rates are increasing at an average of 7.5 percent every year, with the private sector accounting for about 95 percent of total enrolment.

There are about 160 vocational and technical training centres in the public sector (GES technical institutes and MOE vocational training institutes). Within the private sector, there are about 250 registered training centres and more than 700 unregistered private centres operating traditional apprenticeship systems. The informal system is considered to have contributed the vocational skills of about 70 percent of those who are self-employed (Honny, 1999, King, 2001; MOE, 2001).

Between 1987 and the year 2000, VOTEC is expected to turn out over 2,000,000 graduates at the secondary level (GES, 2001). A clear picture has therefore emerged that vocational education has now become a major plank in efforts at making the youth fully productive, and reducing levels of unemployment.

Technical/Vocational Education During the Reforms

Pre-Tertiary Technical, Vocational and Agricultural Education (TVAE) programmes have long formed part of the Ghana educational system. However, the extent to which TVAE features in the education system and its effect on the labour market has long been the concern of many Ghanaians. Therefore, the education reforms placed emphasis on technical, vocational and agricultural education at all levels. The aim was to diversify the curriculum to

allow access for all and the development of technical and vocational skills for employment, including self-employment.

Whereas at the basic education level all pupils are provided opportunities to develop academic as well as practical skills, at the second cycle level it is recognised that all talents and aptitudes must be developed. Some pupils would profit from purely academic training, others would benefit from more technical and vocational training (Middleton et al., 1993; Fluitman, 1999; Honny, 1999; King & McGrath, 2002; Matlay, 2001; Arthur-Mensah & Alagaraja, 2013). The nation needs both types of talents in appropriate proportions. This was the reason behind the diversified curriculum that was designed for the SSS.

Lack of equipment and qualified staff did not allow the technical/vocational education to flourish. Subsequent initiatives by the Ministry to establish technical and vocational training centres along the lines of the Science Resource Centres may help to correct this situation. The concept of technical and vocational skills training in the face of limited resources must be revisited. Conventional wisdom would suggest that specially designed, equipped and staffed technical schools such as the Government Secondary Technical School, Takoradi, are preferred to technical and vocational options located in the traditional secondary school setting (Matlay, 2001; MOE, 2002; Arthur-Mensah & Alagaraja, 2013).

Before the reforms, post-middle school technical and vocational education was provided by Technical Institutes, Vocational Training Centres, and Integrated Centres for Community Employable Skills (ICCES) and a number of privately run technical and vocational institutes. The great bulk of apprenticeship and artisan training in Ghana takes place in the informal sector (Honny, 1999, MOE, 2002). Vocational and business education in particular did not really become part of secondary education. There are more avenues for practical skill development in the informal sector (Fiah, 1981; King, 2001).

Compared to 240 Secondary Schools in 1987 there were only 24 Technical Institutes. Inadequate funding, quality and relevance of the TVAE programmes weakened the schools. Programmes have tended to be more theoretical than practical. Inadequate funding also resulted in the use of obsolete equipment and tools as well as lack of inputs such as books, instructional aids and materials.

The ICCES programmes in the informal public sector since 1987 are co-ordinated by the National Co-ordinating Committee for Technical and Vocational Education and Training (NACVET), an agency of the Ministry of Education.

The National Vocational Training Institutes (NVTI) of the Ministry of employment and Social Welfare co-ordinate the programme of the technical institutes and vocational training centres within the private and informal sector. The Ministry of Agriculture funds and certifies agricultural training programmes offered by institutions, which were established by that Ministry.

At the second cycle, TVAE is offered as subjects or programmes in a variety of formal and informal public and private education and training establishments. These include the Senior Secondary Schools and Technical Institutes. Ten selected Teacher Training Colleges offer TVAE as an integrated course, one in each of the regions of the country.

A significant development during the reform period has been the localisation of technical syllabuses and examinations at technician and trade levels in fields of Construction, Electrical and Mechanical Engineering. Formerly the City and Guilds of London Institute determined the examinations and syllabuses. The costs of the localisation were largely borne by the Overseas Development Administration (ODA) of Britain, since 1997 known as the Department for International Development (DFID) (MOE, 2000).

Since 1987 to 1988, the Technical/Vocational Division of the GES has ordered and distributed technical journals to its 22 technical institutes. To improve management and pedagogical skills the technical education division has initiated the following:

- a 2-year degree programme at UCEW (Kumasi) in management of technical and vocational education for personnel within the service;
- in-service training courses in pedagogical skills for teachers in the public and private technical/vocational institutes;
- the attachment of technical teachers to industrial establishments to improve their skills;
- increasing access for women in TVAE, the Technical Education Division of the GES has created a unit called Women in Technical Education (WITED) whose activities will include sensitisation of women and girls on technical programmes and opportunities (GES, 2000).

Science and Technology Education

> *The low status of Science and Technology in Ghana has retarded the country's economic and social development. The majority of farmers still use traditional methods of agriculture, which help to explain the very slow improvement in crop yields over the years*.
>
> National Development Planning Commission (1994)

A large proportion (44%) of the population is engulfed by insanitary conditions. Life expectancy at birth for males is 60 years while that of females is 63 years. In addition, 31.4% of the population live below the poverty line; infant mortality rate is high, for, out of every 1000 live births, 60 die; maternal mortality rate is also high, 740 per 100,000 live births (World Bank, 1998/99; African Development Bank, 2001). The Adult illiteracy rate is 30% (World Bank, 2000) but the science and technology illiteracy rate is estimated to be over 85 percent. These figures are relatively high in comparison to countries like the Republic of

Korea and Singapore whose socio-economic conditions were similar to that of Ghana at the time of independence.

Structure of Science and Technology Education

The structure of Science and Technology education in the country is closely tied to the structure of general education. There has been an orientation from a theoretical or academic curriculum to a practically oriented one; a shift from emphasis on Euro-academic excellence to socio-cultural relevance or reconstruction of the curriculum. Emphases have long been placed on practical activities, the cultivation of manual and creative skills, self-reliance and the appreciation for the dignity of labour (MOE, 2004; Anarfi & Appiah, 2012).

At the lower primary level (i.e. Primary 1-3), science is introduced to pupils in the form of Environmental Studies, which is a combination of Science, Agricultural Science, Social Studies and Life Skills. All pupils irrespective of gender study this, like all the other subjects in the curriculum.

At the upper primary level (i.e. Primary 4-6), integrated science, which is a fusion of the major branches of science, is introduced. This requires all the various disciplines of science to be taught as, an integrated whole and not as separate subjects. It is intended to provide scientific literacy for all and at the same time prepare pupils for further studies in science at the Junior Secondary level.

In the Junior Secondary School, integrated science taught initially at the upper primary level is continued as one of the compulsory subjects in the curriculum. Applied science in the form of Agricultural Science, and pre-technical skill subjects are introduced at this level. There is an attempt at this level to integrate academic and pre-technical subjects in the same institution, thus offering pupils the opportunity to study both.

At the Senior Secondary level, integrated science remains a core subject for all students. It is aimed at making every student scientifically literate. The principle of comprehensiveness underlies the structure of the system at this level (Gomes, 1999; Scherer & Beckmann, 2014).

Content of Science and Technology Education

Until recently, the content of Science and Technology education in the country was dictated by Euro-American centred curricula. Imported textbooks were used and syllabuses were modelled on them. Even the examples of plants, animals, industries and physical phenomena used in instruction were of Euro-American origin and therefore alien to learners. Above all, authors who knew nothing about the Ghanaian child and the context in which he/she lives wrote the textbooks.

Today, there are textbooks written by Ghanaians with the Ghanaian child in mind. The contents of integrated science taught from the primary to the senior secondary level were selected to provide basic science and technology literacy for all students irrespective of whether they would pursue the study of science and technology in later years or abandon it. The aim is to make every-one who goes through the school system have some basic understanding and appreciation of science and technology to enable him/her make informed decisions in their day-to-day activities. At the JSS, the theme of 'Energy and Matter' and 'Man and his Environment' dominates the syllabus.

Enrolment in Science and Technology Education

The Science and Technology education that existed before the educational reforms was described as elitist, allowing only a few students to participate in it. Girls and students from rural communities failed to gain access to science and technology education. Since the reforms, there has been a transition from this elitist educational system to a system that

embraces the whole community and gives recognition to girls. Indeed increases in enrolment in conventional science disciplines of chemistry, biology and physics have been between 100 and 400 percent (Anamuah-Mensah, 1999).

The policy of making some form of science (e.g. environmental studies and integrated science) available as a compulsory subject at all levels of pre-university education has increased the number of people gaining access to science and technology education (Fabiano, 1998). There has also been a significant increase in enrolment of students in elective science and science-based subjects at the secondary school level (Figure 3.3).

It is said that the institution of the Science and Technology Clinic for Girls (STME Clinic) in 1987 coupled with the training workshops on gender sensitivity for teachers has increased girls' motivation to study science (Sutherland-Addy, 2002). Females however continue to be under represented in all science subjects. In the core science subjects, the average percentage enrolment of females in 1998 is about 38%. In the elective science programme - chemistry, biology, physics and mathematics, it is about 25% while in the agriculture programme, female participation is about 17%. Females are certainly marginalized in the technical programme and this is even more serious in electronics where only males are enrolled.

The increasing participation of girls in physics, chemistry and mathematics will put a certain Dr. Felter to shame. Felter (1906) argued about 100 years ago that "girls should not be taught physical science except at the most elementary level, because the expenditure of nervous energy involved in the mastery of analytic concepts would be injurious to their health". His fears have no basis either now or before.

As indicated in the Figure 3.3, enrolment has fluctuated over the years. There are slight decreases in enrolment in some of the elective science subjects over the years. Female

participation increased slightly, as, with the establishment of senior secondary schools in communities, many more students are given access to science and technology education.

Quality of Science and Technology Education

The successful utilisation of science and technology for development depends on the quality of education offered (Levinson, 2000; Tikly & Barrett, 2011).

At the primary level, there is no national yardstick to assess the performance of pupils in environmental studies and integrated science. Observations indicate that many schools do

Figure 3.3: Enrolment of SSS Final Year Students in Science and Technology Programmes by Year and Gender

Programme	Subject	1996	1997	1998
Core	Science	67673 (36%)	67575 (38%)	68746 (40%)
	Mathematics	74112 (37%)	73404 (38%)	7769 (40%)
General Science	Physics	12501 (24%)	13177 (26%)	12706 (26%)
	Chemistry	12270 (25%)	12494 (27%)	12361 (28%)
	Biology	8802 (30%)	8726 (34%)	7728 (35%)
	Mathematics	8477 (14%)	8411 (15%)	9576 (15%)
Agriculture	General Agric	8585 (19%)	7829 (18%)	7814 (20%)
	Horticulture	8006 (20%)	7355 (18%)	7554 (23%)
	Agric Economics	8225 (19%)	7754 (18%)	7433 (20%)
	Farm Mechanisa.	540 (21%)	433 (16%)	-
Technical	Electronics	76 (0%)	59 (0%)	82 (0%)
	Technical Draw.	5148 (1.5%)	4560 (1.4%)	-
	Building Const.	3390 (1.7%)	2908 (1.6%)	-
	Metal Work	1383 (1.7%)	1101 (1.4%)	-
	Applied Electric	328 (2.7%)	324 (1.9%)	-
	Woodwork	3354 (1.7%)	2799 (1.1%)	-
	Auto-mechanics	314 (3.5%)	274 (3.3%)	-

Source: WAEC Examination 1997/1998 (Figures in parentheses are percentages of female enrolment)

not teach science. At the JSS level, pupils' performance in the Basic Education Certificate Examination (BECE) in science and agricultural science and technical subjects has improved over the years, even though a large number of students continue to fail (Anamuah-Mensah, 1999).

The performance of students in the senior secondary school certificate examination shows some improvement in core science-based subjects, elective science, and applied science and technical subjects over the years, 1995 to 1997 (Figures 3.4 and 3.5). However, there is still a substantial percentage of students (about 40%) who fail these subjects. The percentage of female passes is very low (less than 25% of females) in both the core and elective subjects. Female participation and performance in technical subjects is exceptionally low. No female student has so far studied electronics since the implementation of the new science and technology programme at the SSS level (ibid, 1999).

In general, students in urban areas tend to perform better than those in rural areas at both the JSS and SSS levels. It has also been observed that girls in single-sex schools tend to excel over boys in co-educational schools in science and technology, which is in accordance with many other countries.

The provision of resources for teaching science and technology has been one area of concern for educators (Fabiano, 1998; Scherer & Beckmann, 2014). There is an unfair distribution of resources - teachers, textbooks, equipment, teaching/learning materials - between rural and urban schools for the teaching of S&T. Rural schools are disadvantaged. At the primary level, teachers are to use what is in the environment to teach Science and Technology. However, because of the inadequate preparation of teachers for this level, the teaching of Science is neglected. Textbook supply to pupils is yet to reach 1: 1 level. At the JSS and SSS levels, the most serious drawback is the lack of well-equipped workshops for

teaching vocational technical skills subjects. Laboratories at SSSs are poorly equipped with essential chemicals and equipment, thus making it impossible for effective practical work to be carried out (Anamuah-Mensah, 1999; Scherer & Beckmann, 2014).

The establishment of Science Resource Centres equipped with computers, computer-assisted learning packages and other science teaching materials not normally found in school science laboratories has provided a partial solution to the lack of adequately equipped

Figure 3.4: Percentages passes in Science and Technology Subjects at SSSCE: Core Science – Based Subjects

Subject	1995	1996	1997
Science (core)	25.7[1] (6.0)	28.8 (7.2)	47.1 (14.9)
Maths (core)	40.1 (10.6)	44.2 (12.8)	37.6 (10.8)
Agric Science (core)	65.3 (20.2)	56.9 (17.5)	70.3 (24.7)

Source: WAEC Statistics, 1998

( ) represents percentage performance of girls

[1] Figures indicate percentage passes for both boys and girls

Figure 3.5: Percentage passes in Science and Technology Subjects at SSSCE: Elective Science – Based Subjects

Area	Subject	1995	1996	1997
Agric	General Agric	50.4[1] (6.0)	60.4 (9.1)	63.1 (9.4)
	Farm Mech.	70.6 (8.4)	75.9 (11.7)	79.6 (7.9)
	Horticulture	71.4 (10.1)	72.9 (11.9)	69.0 (10.4)
	Agric., Econs. & Ext.	48.7 (5.8)	41.1 (5.8)	53.0 (7.5)
Science	Biology	39.7 (10.7)	42.7 (11.2)	61.6 (20.4)
	Physics	44.6 (13.5)	38.3 (7.8)	58.5 (8.6)
	Chemistry	27.6 (5.5)	44.6 (10.2)	51.6 (12.9)
	Maths	37.1 (3.5)	40.9 (4.5)	64.2 (8.9)
Technical	Tool Drawing & Eng.	15.9 (0.1)	23.8 (0.1)	31.7 (0.4)
	Building Construction	25.50 (0.1)	58.3 (0.6)	32.9 (0.2)
	Woodwork	48.8 (0.7)	53.2 (0.4)	78.0 (0.5)
	Metal work	63.3 (0.7)	71.5 (0.6)	72.8 (0.2)
	Applied Electricity	47.0 (0.3)	58.6 (1.2)	69.3 (0.9)
	Electronics	68.3 (0.0)	72.0 (0.0)	70.1 (0.0)
	Automechanics	49.7 (0.4)	43.1 (0.30)	66.0 (2.1)

Source: WAEC Statistics, 1998 ( ) represents percentage performance of girls

laboratories and also enriched the students in other areas (Naidoo, 1998; Scherer & Beckmann, 2014). In spite of this, schools should be adequately equipped to enable them to deliver quality education.

Science and Technology Programme Implementation

The strategies that underlined the implementation of the Science and Technology programme as part of the educational reforms created impediments to its successful implementation. The obstacles to successful implementation have included the following:

Overloaded and overly ambitious syllabuses

This is especially so with the Science and Technology programmes for senior secondary schools. Inadequate number of trained and qualified science and technology teachers: Teachers capable of effectively handling the new programmes should have been trained before the implementation. As a result, many schools now lack technical teachers at the JSS and SSS levels. Also, with the introduction of the integrated science subjects at the basic and senior secondary levels, teachers with the requisite training should have been produced a year before implementation. There is still a lack of "integrated science teachers" who can provide a holistic type of instruction; that is, teach all the three traditional branches of science as one subject. Integrated Science at the JSS and SSS continues to be taught as separate disciplines of chemistry, biology, and physics by different science subject specialists. This, however, tends to defeat the purpose for which the integrated science programme was introduced.

Lack of resources for implementing the programme

Most primary teachers lack the imagination to use the resources in their environment for teaching science at the primary level. Research has shown that very little science is taught at the primary level. Science and Technology education at JSS and SSS and even at the

training college and tertiary level lack well motivated teachers. Teachers generally engage in other economic activities to supplement their salaries. In addition, there is lack of teaching/learning materials and facilities for these subjects. Many schools are unable to take their science students through the recommended activities and experiments in the science and technology syllabuses because of the lack of chemicals, or equipment or both (Asare, 2011).

Inappropriate teaching strategies

For a long time Science and Technology Education has utilised only one 'channel', the chalk and talk approach for instruction. At the JSS and SSS levels, teaching is basically examination-driven. This does not allow teachers to use creative student-centred methodologies, which the curriculum clearly specifies (Savage, 1998; Scherer & Beckmann, 2014). They teach to the external examination, which emphasises the learning of formal definitions and the memorising of notes. There is also a tendency to try to cover the syllabus. But Muralidhar (1993) says that "covering the syllabus is easy but "uncovering" it to students is difficult." Other effective alternatives such as use of museums, field trips and industrial visits, which could be used as supplements to science and technology education, were neglected.

The Education of Girls

The advent of early missionaries ushered in formal education, which was mostly male-biased, to the extent that, more boys were enrolled in formal education whilst girls were thought to be more receptive to non-formal education. In the nineteenth century, people came to realise the need to do something about the initial trend of educating more boys in schools (Ardayfio-Schandorf, 1999; Sutherland-Addy, 2005).

Nevertheless, the gender disparities introduced continued when these children graduated into secondary schools. Now the government recognises the need for a new

approach to education with special reference to girl's education in the on-going education reforms in the country. At this point it is appropriate to review the participation of girls in formal schooling vis-à-vis boys in contemporary Ghana.

Participation Rates of Girls in Ghana

The participation rates of girls in formal education have been increasing over the years in response to the education policy of the government towards universal primary enrolment, and eradication of illiteracy. However, at all levels girls still lag behind boys (Asomaning, 1994; Colclough, 1994; Odaga and Heneveld, 1995; Brock and Cammish, 1997; Stephens, 1998; Stephens, 2000; Subrahmanian, 2005; Sutherland-Addy, 2005). This is contrary to the popular notion that at the primary levels enrolment of boys and girls is at 50:50.

Regional disparities in respect of enrolment are also considerable. In the Greater Accra and Central Regions of Ghana, the gross enrolment rates are over 95 percent (including private schools) whereas it is only 43 percent in the Upper East Region. Gender disparities are greater in the three northern regions with low enrolment rates. The girls' participation rate of under 40 percent in this region compares with the national average of 70 percent (Grieco et al, 1994, UNESCO, 1993; Sutherland-Addy, 2002).

On the basis of available statistics from the Ministry of Education for ten years (1986 - 1996), which covers the period of the recent education reform, the participation rate is clear. The enrolment of boys and girls shows a steady increase from the period under review. The percentage enrolment of girls is on the average 45.5%. This ranges from 44.6% in 1986 to 46.5% at the primary level in 1996 (Figure 3.6). At the Junior Secondary School level only 35.9% of the number enrolled in the primary school were enrolled in the Junior Secondary School (JSS) in 1986 (Figure 3.7). By 1996 the number of pupils enrolled in the JSS comprised 32.4% of the primary school total. At this level the mean female percentage

enrolment was 41.7% showing a decrease of 8.3% over primary enrolment. The enrolment rate continues to fall further in the Senior Secondary School where only 23.9% of the enrolment recorded in the JSS is represented. At this level, the percentage enrolment of female ranges from 31.9% in 1986 to 37% in 1996 (Figure 3.8). One adverse observation in the Senior Secondary School enrolment is the steady decline of total enrolment, from 245,897 in 1993 to 199,028 in 1996, representing 19% decrease in enrolment. This is a real steep decline over a period of 3 years (Ardayfio-Schandorf, 1999; Sutherland-Addy, 2002).

The 1987 reforms set out to correct the imbalance in the enrolment of girls and their retention in formal education. It is largely a rural problem that is particularly evident in the Northern, Upper East and Upper West Regions. Enrolment statistics indicate some improvements following the initiatives taken to address it as well as the heightened awareness of the problem (Stephens, 1998; Stephens, 2000; Sutherland-Addy, 2005).

Girls Education Unit

A Girls Education Unit (GEU) was established within the GES in 1997. The GEU seeks to promote the education of girls in order to:

- bring parity of access to education and educational opportunities;
- enable them to contribute more effectively to the development of the nation;
- improve the status of women and girls;

Figure 3.6: Enrolment in Primary Schools in Ghana (1986/87 – 1995/96)

Year	Boys	Girls	% Female	Total
1986/87	929,933	749,144	44.6	1,679,077
1987/88	927,412	749,662	44.7	1,677,074
1988/89	887,261	711,182	44.5	1,598,443
1989/90	939,010	764,064	44.9	1,703,074
1990/91	1,065,992	879,430	45.1	1,945,422
1991/92	1,093,191	918,411	45.7	2,011,602

1992/93	1,106,785	940,508	45.9	2,047,293
1993/94	1,152,700	985,935	46.1	2,138,635
1994/95	1,155,786	998,860	46.4	2,154,646
1995/96	1,175,367	1,021,368	46.5	2,196,735

Source: MOE Statistics, 1998

Figure 3.7: Enrolment in Junior Secondary/Middle Schools in Ghana (1986/87 –1995/96)

Year	Boys	Girls	% Female	Total
1986/87	354,150	249,042	41.3	603,192
1987/88	358,260	251,834	41.3	610,094
1988/89	357,244	251,446	41.3	608,690
1989/90	366,830	258,188	41.3	625,018
1990/91	337,108	232,235	40.8	569,343
1991/92	356,189	249,571	41.2	605,760
1992/93	374,130	270,846	42.0	644,976
1993/94	389,724	286,458	42.4	676,182
1994/95	393,166	297,392	43.1	690,558
1995/96	403,604	310,274	43.5	713,878

Source: MOE Statistics, 1998

Figure 3.8: Enrolment in Senior Secondary Schools in Ghana (1986/87 – 1995/96)

Year	Boys	Girls	% Female	Total
1986/87	98,396	46,045	31.9	144,441
1987/88	103,367	49,917	32.6	153,284
1988/89	103,991	50,486	32.7	154,477
1989/90	112,542	55,458	33.0	168,000
1990/91	133,581	65,679	33.0	199,260
1991/92	156,815	79,147	33.5	235,962
1992/93	169,479	87,876	34.1	257,355
1993/94	159,706	86,191	35.1	245,897
1994/95	134,207	74,983	35.8	209,190
1995/96	124,356	74,672	37.5	199,028

Source MOE statistics, 1998

- develop the social capital of women (social capital embodies education, status, self-confidence, bargaining power, access to resources, experience of the political and economic world).

The specific tasks of the GEU are to increase the national enrolment of girls in primary schools to equal that of boys by the year 2005, to reduce the dropout rates for girls in primary schools from 30% to 20% and of girls in JSS from 21% to 15% (GES, 2000; GOG, 2004).

The GEU has the responsibility for the Science, Technology, and Mathematics Education (STME) Clinic for girls, which was started by the GES in 1987 to encourage secondary school girls into science and technology-based careers. The clinics, which are held annually, enable girls to interact with women scientists and technologists, serving as role models, to dispel the notion that these professions are not appropriate for women. The STME was decentralised in 1997 to the district level. The participants now include JSS girls. Clinics which were organised in August 1999, brought together 2000 girls.

A pilot programme to increase enrolment and retention of girls was initiated in 1991 under the Primary Education Programme (PREP), which was funded by USAID. This programme provided scholarships for girls from poor families in areas with low female enrolment (Ardayfio-Schandorf, 1994; Odaminten, 1995; Sutherland-Addy, 2002).

Teacher education

One significant effect of the reform has been the increase in the number of qualified teachers in the schools. According to the government document *Basic Education-A Right* (1993), the population of trained teachers rose between the 1987-88 and 1992-93 school years from 58 percent to 68 percent at primary level and from 67 percent to 75 percent at the JSS level. For basic education as a whole the percentage of trained teachers stands at 71%, but the shortage of trained teachers for vocational and technical skills remained serious. As a consequence, the practical training workshop concept at the JSS and the SSS levels remains a

myth in that a survey of JSS and SSS reported that only 24 percent of the schools had functioning workshops (Asare-Bediako & Nti, 2014).

Teachers for the JSS

A large number of Ghanaians who were qualified had left the country during the period of economic decline in the late 1970s, and teachers in many critical subject areas were not available at the start of the reform. Teachers of science, technical studies, and Ghanaian languages were in critically short supply. In addition to exposure to the new syllabus, teachers urgently needed a change in attitude and improvement in motivation.

Because the majority of practising teachers were not qualified, improving teacher training received priority attention. The four-year post-middle teacher training programmes were phased out, and there was a marked increase of intake into post-secondary institutions. Trained teachers holding the middle school certificate were moved to primary schools. All JSS teachers were given in-service education and training (Asare-Bediako & Nti, 2014).

Policy implementers were faced with a situation in which teachers were scarce, yet they could not use post-middle school trained teachers because their level of competence was deemed too low to teach the JSS curriculum. Experienced headteachers in the primary schools who were not technically qualified for their positions were replaced. Yet their replacements were not those who knew better the methods to do the job, but those with a higher level of academic training. This had serious repercussions on the teaching and learning process. The Government's choice of focusing on academic qualifications rather than teaching experience and skills proved to be unfortunate, and underscores the need to place the consideration of availability and training of teachers at the heart of reform strategies.

Teacher preparation for the reforms took the form of short in-service training courses for teachers to enable them use the new syllabuses effectively and to sensitise them to the

objectives of the reforms. Initial teacher training was restructured and new syllabuses were written. The 4-year Post-Middle School Teacher Training programme was phased out in 1991 giving way to only 3-year Post-Secondary Programmes in the 38 Teacher Training Colleges. The 3-Year Post-Secondary Colleges were grouped into two:

- Group I Colleges offered Mathematics, Science, Agricultural Science, Technical Skills and Technical Drawing.
- Group II Colleges offered Social Studies, Literature in English, Vocational Skills and Life Skills, while French is offered at Mount Mary College only. In addition, each trainee irrespective of the group he/she opted for studied a number of core subjects.

To support these efforts to produce better teachers, a new concept in teacher education, the Whole School Development (WSD) programme, was introduced. It is a school-based intervention programme to improve teaching and learning in basic schools. The WSD takes the form of training programmes to build capacities in the district and schools (Bame, 1991; MOE, 1998; UNESCO, 1998; Rothstein, 2010; Duflo et al. 2012).

Under the FCUBE programme, competent teachers are needed for Basic Schools throughout the country. However, it has been difficult to get trained teachers to accept postings to the rural areas. Even when teachers accept posting they do not stay for long. Under a new scheme, District Assemblies will be made to sponsor teachers under training, to ensure that most teachers return, at least, for their initial appointments to their regions of origin or residency. The sponsorship scheme is to take off in the 2000/2001 academic year. Sponsored teachers will be contracted to teach for three years in the districts that sponsored them (MOE, 1999; Bediako & Asare, 2010).

Schools may well turn out to add to or mitigate the influence of society. But the continual weakening of teacher quality and of teacher salaries are bound to put at risk many positive school effects in the bulk of ordinary schools (Bediako & Asare, 2010; King, 2001; Rothstein, 2010; Duflo et al, 2011).

Current Education Situation

At the time of independence in 1957 Ghana had only one university and a number of secondary and primary schools. Its spending on education was between 30% and 40% of its annual budget (World Bank, 2017). Currently Ghana has 18,530 primary schools, 8,850 junior secondary schools, 900 senior secondary schools, 20 technical institutions, 4 diploma awarding institutions, 6 public universities and over 15 private universities, in addition there are 12 polytechnics. There are 38 colleges of education responsible for teacher education. Five private colleges are to be absolved into the group of 38 public institutions bringing the number to 43. Education Bill Act 847 will be passed into Law creating colleges of education (Wikipedia, 2017).

Funding the Education Reforms

Funding for the reform programme was provided by two World Bank projects, the First and Second Education Sector Adjustment Credits (EDSAC 1 and 2). EDSAC 1 (1987-1990) targeted Basic Education - specifically JSS, and EDSAC 2 (1991-1994) focussed on Secondary Education. Funds from ESAC 1 provided syllabuses, textbooks in eight subjects (Mathematics, English, Science, Agricultural Science, Social Studies, Cultural Studies, life Skills, and Basic Technical Drawings), Teachers' Handbooks for Mathematics, English, Science and Vocational Skills, Agricultural Tools for all schools (one box for each stream), Science kits for all schools (one box for each stream), T-squares for Technical drawing, stationery, classroom pavilions, classroom furniture and vehicles for District Directors of Education (Ziderman, 2003; World Bank, 2004; Bediako-Asare & Nti, 2014).

The primary focus for EDSAC 1 was on JSS although assistance was given to the other aspects of the reform; for example, EDSAC helped in the preparation of the Primary School syllabus. In 1990, USAID provided a four-year grant to support primary education reform, the

USAID Primary Education Project (PREP). PREP provided budgetary support to the government to maintain levels and expenditures for primary education and for the provision of essential inputs, including textbook and instructional material, in-service teacher training and strengthening District Education Offices (UNICEF, 1994; World Bank, 2004; Thompson & Casely-Hayford, 2008).

Other donor support to the education reform particularly as it affects Basic Education, has been critical. Such donors include: the World Bank, ODA (teacher education), UNICEF (primary and pre-schools), NORRAD (school pavilions), OPEC Fund (school pavilions and sanitation), World Food Programme (school feeding), and a number of Non-Governmental Organisations.

The Government of Ghana requested IDA assistance of SDR 34.7 million (US$50.0 million equivalent) to help finance the first (five-year) phase of a basic education sector improvement programme which will be implemented over the ten- year period 1996-2005, aimed at improving: teaching and learning outcomes; access to primary and junior secondary education (especially for girls and the poor); efficiency in resource management; and financial sustainability (World Bank, 1995b; Thompson & Casely-Hayford, 2008).

This request was based on experience gained over nine years from a series of Government, IDA, and other externally funded activities in support of the National Education Reform Programme. It was in response to a constitutionally mandated requirement that universal basic schooling be available to all young Ghanaians by the middle of the next decade.

Donor support

Prior to 1986, a lack of funding had contributed to the failure of most education reforms in the country and kept good reform proposals for example 1974 reform proposal on

the shelf. With its strong ambition to reform the education system, government sought to explore all avenues in restructuring the nation's economic base to bring it into conformity with the credibility levels required by the World Bank. With this condition met, Ghana had the opportunity of negotiating for credits and grants to finance a colossal education reform. Between the inception of the Education Reform Programme in 1987 and the end of 1994, the sector received approximately $400 million in credits and grants from the World Bank, USAID, UNICEF, ODA, and other donors. A great part of this donor assistance was directed to basic education. It supported the development of new curricula, syllabi, and textbooks, in-service training for teachers, and also helped to restructure and strengthen management and to provide classroom pavilions, furniture, and houses for headteachers and teachers. The World Bank alone provided $232.1 million in credits for seven key projects. This package was one of the largest World Bank funded education programmes in the world at that time (World Bank, 1994a; World Bank, 2004).

Although the World Bank is different from other donors, primarily providing loans to member governments, its lead position in the donor community provides it with a potentially powerful role in supporting civil society. Ghana is the World Bank’s largest programme in Africa. Between 1993 and 1995, the bank provided one third of the country’s total aid (Hearn, 2000; Thompson & Casely-Hayford, 2008).

Apart from the World Bank credits, several donor agencies came to the aid of Ghana in her reform implementation. Figure 3.9 shows the credits and grants provided by the donor agencies and the purpose for which the assistance was granted.

Figure 3.9: Donor Support for Education Reforms in Ghana

Donor	Total Credit/Grant (US$ millions)	Purpose
World Bank	232.1	General improvement of basic secondary and tertiary education
USAID	35.0	Improvement of primary education
ADB	20.0	Tertiary education
Canadian CIDA	14.0	Basic and technical education
British ODA	8.0	Literacy and teacher training for basic education
Norway	4.0	Literacy and school pavilions for basic education
OPED Fund	(not specified)	School pavilions and sanitation
WFP	(not specified)	School feeding
UNICEF	(not specified)	Primary and pre-school
Switzerland	(not specified)	Secondary school equipment
The Saudi Fund	(not specified)	Secondary school development
GTZ	(not specified)	Vocational school development
UNDP & ILO	(not specified)	For institutional strengthening

Source: World Bank, 1994 Report on Ghana

Under its Primary Education Project (PREP), USAID gave Ghana a grant of $35 million. As noted earlier, the reform of 1987 was conceived as a continuation of the education reform launched by a previous government. Assuming the reform was already in place at the primary level, the reformers in 1987 focussed on the junior and senior secondary levels. But public criticism of weaknesses in primary education attracted the attention of USAID, which wanted to help strengthen the policy and institutional framework required to assure an effective, equitable, and financially sustainable primary education system in Ghana by the year

2000. The PREP project was established in 1990 as a sub-unit of the Project Management Unit (MOE, 1994). Conditionality related to school financing, policy formation and programme implementation was spelt out to ensure that grant funds were properly utilised.

USAID has also been at the forefront in promoting economic liberalisation through civil society programmes. This has been particularly evident in Ghana, which has embarked on an ambitious twenty-five-year liberalisation programme entitled – Vision 2020, by means of which it hopes to transform itself into a middle-income country with annual growth rates of 7 percent (USAID/Ghana, 1997; UN, 2001; World Bank, 2001; Thompson & Casely-Hayford, 2008). To succeed, such accelerated adjustment requires broad societal consensus.

Role of External Partners in Financing Education in Ghana

Prior to 1987, there was very little external support (Thompson & Casely-Hayford, 2008). However, with the coming of the education reform programme, external donors started coming back to the country in a desire to help Ghana put in place a set of policies and programmes that they felt-- on balance -- were important reform measures that needed to be taken to re-establish Ghana as a leader on the education stage in sub-Saharan Africa. Since the beginning of the reform programme, vast sums of money have come into the country for this purpose:

- for basic education alone, $400 million;
- for tertiary education, $65 million;
- for functional literacy for school dropouts and young adults, $50 million;

additional funds have also come into support senior secondary schools, teacher training colleges, and vocational and technical institutes (DFID, 2000; Leno, 1999; Ziderman, 2003).

At the same time, it should be noted that Government financing of education was increasing, as was the amount contributed by beneficiaries at all levels.

These funds have been used to bring into the country, and down into the classroom, a wide range of goods and services. Starting with the early days of the reform in the late 1980s, funds were used to import science teaching kits, textbooks and readers, and equipment for JSS workshops. They also supported an important in-service teacher-training programme. This was followed in the early 1990s by a major support programme to primary education, including classroom inputs, teacher training, and development of the Criterion Referenced Test.

Later, donor monies financed the reform and expansion of senior secondary education through development and provision of books, supply of equipment, and teacher training, as well as rehabilitation and the construction of community secondary schools.

At present, a number of donors are actively supporting the sector. These are DFID, USAID, EU, JICA, GTX, KFW, UNICEF, African Development Bank, the Netherlands, the French Embassy, UNESCO, and the World Bank. For now nearly all this support is directed at the basic education subsector. This support is provided in two ways: first, through direct financial support. In addition, development partners provide not only money, but also technical expertise, both local and international. Recently the World Bank has donated $156 million for the improvement of secondary education programme in Ghana starting from 2014-2019 (Sakyi, 2015; World Development Indicators, 2015).

The Coordination of External Aid

If these funds and technical assistance inputs are to be useful to Ghana, it is clear that they must be well coordinated by the Government. If not, donors can come in the back door and set up all sorts of activities that might not respond to Government's priority needs. They can also come in and engage in activities that contradict each other.

These issues are important, because they raise the fundamental pre-requisite for effective use of external support: that is to say, Government's clarity about its goals and

objectives, and its ability to set out a programme that responds to these goals and objectives. This is the case in basic education, where Government has made a commitment to the FCUBE programme and has asked MOE and GES to implement that programme. It was the clarity of that vision, based on a good analysis of the problems in basic education that attracted donors to come in with offers of support. FCUBE is a guide to where Government wants to go with basic education, and so donors have been ready to sign up to support it.

The Role of the Private Sector in Education

Until recently private education was largely restricted to Basic Education. It is reckoned that about 16% of primary school population in Ghana is in the private sector, and that in Accra alone 43% of children attend private schools (Tettey-Enyo, 2000). Before the on-going reforms, private basic education was common in urban centres. Their pupils came from the higher socio-economic segment and the commitment of parents enabled proprietors to recruit teachers and pay them salaries higher than those paid in the public sector.

The fact that products of private schools excelled in the Common Entrance Examination and still do so at the Basic Education Certificate Examination has been taken as a guarantee for access from private basic schools to secondary education. This has made the opening of private basic schools a thriving business causing the trend to spread from urban centres to the rural areas throughout the country.

The Role of Private Schools since the Education Reforms started in 1987

The Education Reforms embarked upon in 1987 and more so the Free Compulsory and Universal Basic Education Programme (FCUBE) which started in 1996, have given a new thrust to the establishment of private schools, particularly basic schools.

The Education Reforms of 1987 and the on-going FCUBE programmes advocate "quality education" and seek to re-focus national objectives to meet the socio-economic needs of the country through the reform of the structure and content that would ensure the following:

- improved quality teaching and learning;
- improved management for efficiency;
- improved access and participation.

Thus since 1987, there has been the need to bring private educational institutions into the mainstream of national education planning and management. Statistics on openings and enrolments in private schools are compiled alongside public schools and the provision of syllabuses and textbooks, where available, is being made equally to both public and private schools. All pupils in basic school now go through the 9-year basic school cycle and take the Basic Education Certificate Examination (BECE).

The Government subsidises the Basic Education Certificate Examination fee for all candidates whether private or public. In the past, most private basic schools did not teach the same number of subjects as the public schools. They concentrated more on English and Mathematics to enable their pupils pass the Common Entrance Examination. The new structure and content of basic education enjoin the private schools to use the same curricula and syllabuses in addition to textbooks approved for use at all levels of pre-tertiary education.

The Case for Regulating Private Schools

With increasing private participation in pre-tertiary education, the need to introduce measures aimed at ensuring that private schools operate within the framework of national educational policy guidelines has become paramount. Proposals have been submitted to the GES, GES Council and the MOE by concerned individuals, associations and institutions on various aspects of educational policy that must govern the operation of private basic schools. These regulations could also be adapted to apply to Nurseries (Kindergartens), Vocational and

Technical Institutes as well as Senior Secondary Schools (Bennell, 1996; Tettey-Enyo, 1998; Boateng, 2012).

One of the issues of public concern is the high fee charged in private basic schools. As has been the practice in some countries, regulatory bodies are established to oversee the fixing of tariffs, fees and prices of certain utilities, services and commodities. Education is an essential social service therefore the Ministry of Education through the Ghana Education Service Council has been regulatory body in determining fees chargeable in private schools. However, it has been the practice of some private schools to increase fees as and when salaries of personnel of the public sector are increased, or to procure teaching and learning materials or undertake development projects without reference to laid down procedures. Such arbitrary increases are not only frowned upon by the affected parents but also rejected by the Ghana Education Service, leading to acrimony and prolonged negotiations between the GES and the management of those schools.

Normally, the Ghana National Association of Private Schools sends a proposal on fees covering all levels of schools Nursery/Kindergarten, Primary, JSS, Second Cycle and grades (A, B, C, D).

The proposals are then studied by a team comprising GES personnel and representatives of the Private Schools Association and where necessary, recommendations or adjustments are made. After such an exercise, the approved fees are communicated to the Secretariat for implementation.

Dissenting Views of the 1987 Reforms

The provisions of the reform were not universally accepted. The GNAT, NUGS, various individual educators, such as Akirapa Sawyer, the Christian Council of Ghana, the Bishops

Conference, and other professional bodies, as well as by the general public, expressed dissenting views. These included the following:

- The competence of the average primary-grade-six child was too low to grapple with the junior secondary school curriculum.
- The training of teachers required more time.
- The pace of the reform was too fast.
- Logistics were not well planned.
- The reduction in the duration of pre-university education was too drastic.

The reform pronouncement had agitated many groups, which submitted their own views to government. Notable among these were GNAT and NUGS. The former, at its Congress in November 1986, invited the Vice Chancellor of University of Ghana, Legon, to address its members. The Congress used the newspaper as a forum for expressing its reservations and recommendations to government. The NUGS invited the Secretary of Education to explain more clearly the purpose and reason for the reforms. It used the occasion to clarify pertinent points and to offer suggestions. The crux of its recommendations are summarised here:

> *The NUGS recommends that the Junior Secondary School package should not be implemented in a rush. It proposes that a national Implementation Committee be set up to do feasibility studies and to see to the provision of vital ingredients like school buildings where there are no basic and vital equipment for teaching vocational, technical and science subjects, the required numbers of teachers well schooled in the various demands and challenges of the new system in order not to bungle this fine package. Grave doubts were expressed as to whether the economy could shoulder the burden of having to provide infrastructure, equipment and teaching skills in all schools in the country* (NUGS, 1986).

Generally, dissenting views were not tolerated, creating tension between policy implementers, students of tertiary institutions, academic elites, certain professional bodies, the Catholic Secretariat, and others. For instance, students in the tertiary institutions, particularly the universities, demonstrated and submitted memoranda to government on their reservations about the reform. These demonstrations led to the dismissal from the university of some

members of the NUGS Executive Committee and the Students Representative Council of the University of Ghana. This, in turn, led to prolonged struggles between students and government until those who had been dismissed were reinstated.

Seven years later, the Education Review Committee (set up in 1994) echoed the concerns about omission of religious education from the curriculum, extension of the senior secondary school programme by at least a year, and the overloaded nature of the curriculum. They contended that if some of these views had been considered and incorporated into the reforms, the abysmal performance of the first cohort of the senior secondary school graduates in 1993 could have been averted. Notwithstanding the comprehensive nature of the reform proposals in 1986 there were issues which worried the public and which, it was felt, should be highlighted. In his address to national delegates Conference of the Ghana National Association of Teachers in January 1987, Dr A. Sawyerr, Vice-Chancellor of the University of Ghana, raised issues of substance concerning the impending educational reform (Sawyerr, 1987).

First, Dr Sawyerr denied any 'scientific basis' for the notion that one can 'predispose' junior and senior secondary students to agricultural and technical work. He contended that unless appropriate developments in the national economy together with a programme of political education and organisation made up for the lack of material incentives with regard to productive work, secondary school leavers would drift into trading, and youth unemployment would persist. He cautioned 'policymakers, experts, implementers and the general public' to study Chapter 7 of the Seven-Year Development Plan of the First Republic on 'Education, Manpower and Employment' before proceeding further to discuss and implement the educational proposals. What was implied in this suggestion was that the approach adopted in the Seven-Year Development Plan to relate educational reform to specific manpower targets should have served as a model for the 1987 reform programme (ibid.).

Secondly, Dr Sawyerr drew attention to the absence of specific provision to encourage pre-university science education. He observed that the universities were unable to fill the places allocated for science and science-based courses with qualified applicants. He feared that the proposed 5 percent annual increase in university admissions would result in an increase in non-science enrolments and worsen the ratio of science to humanities graduates.

Thirdly, Dr Sawyerr took issue with the proposed 'realistic' student-teacher (more students, same number of teachers) ratio in pre-university schools. He demanded to know 'what credible programme is there for training on a serious long-term basis' the kind of new teacher required for the new system? It should be emphasised that the success of the comprehensive proposals in education depends primarily on the presence of an adequately trained and motivated cadre of teachers otherwise the new system will reproduce the old.

The most troublesome issue was the fourth, relating to the cost recovery policy adopted by the government. Under the 1986 proposals, the cost recovery would have taken the form of making parents increasingly liable for book-user fees, and for total residential and feeding costs at secondary and University levels. The board and lodging subsidy was officially reckoned in 1986 at C6,100 for secondary and C21,000 for university students. Assuming parents spent roughly the same amounts to maintain their children in these institutions, the removal of the subsidy would require parents to spend at least C12,000 and C42,000 a year for each of their children attending secondary schools and universities. Dr Sawyerr wondered in fact whether the government intended to discourage the children of the majority of Ghanaians from going to secondary schools and universities since they would not be able to afford to pay the fees. He noted that the introduction of the concept of cost-recovery in education was 'an extension of the process of privatisation' recently spreading through various sectors of the national economy'. This involved the transfer of the cost of certain services such as hospitals

and state enterprises, as at present borne by the government, to individuals, organisations and the community. Individually defensible on economic grounds, taken collectively the measures 'foreshadow a basic change in the way social costs are allocated' and are likely to have serious implications for the political and social development of Ghanaian society'.

An observation by a former GES Director-General is illuminating. Instructional time had declined, content of the curriculum had increased, and the available time to the teacher had been further tasked with more paper work generated by the continuous assessment system. Yet government did not allow debate on the package. It appears that the reform took off without clear insight into the state of the education in the country (Djangmah, 1994). A former Ministry of Education official commented that the reform was pushed through by "six dedicated very passionate people who believed they had something good to offer the country and went all out to implement their vision" (DAE, 1996).

Sutherland-Addy (2005) argues that many of the education reforms in Ghana had not been fully implemented and trailed off after the experimental stage. This she argued was due to insufficient commitment to the policy by the managing technocrats, lack of resources or they were simply abandoned by an incoming government for differences in ideology.

Conclusion

Although the introduction and survival of a junior secondary sector in a country's education system is a common feature in international perspective, the JSS in Ghana has, perhaps, had to bear heavier load than most in terms of expectations. Its appearance has coincided very approximately with a general upturn in Ghana's economic profile, though this improvement is evident largely from indices at the national scale, and relative to the generally less impressive figures of other West African states. However, while there seems little point in attempting to relate the record of one decade of JSS operations to the country's economic

fortunes at more local levels, the record of this sector may realistically be investigated, especially in view of the vocational orientation of the reform.

Ghana has been involved in a serious structural reform for over a decade moving away from its colonial model of schooling towards those endorsed by the international community and attracting hundreds of millions of dollars in outside investment. Having discussed the general and educational context of the JSS sector in Ghana, it is now necessary to identify the key issues arising from the primary research question, to discuss them in the light of relevant literature and to put forward a methodology through which to undertake the main empirical effort.

Chapter 4

Issues and Methodology

Introduction

This section explains how the framework of the Havelock and Huberman IAC model has been used to guide data collection. Three main research questions are identified in relation to Infrastructural (I) issues, Authority Structure (A) and degree of Consensus (C) amongst actors. The first of these is the most complex and all-embracing and its exploration is subdivided into problem-solving phases of conceptualisation, implementation, and evaluation relating to the JSS. In the subsequent analysis of data I A and C factors are examined at National, Regional and School levels. The last part of the chapter outlines in detail the research methods used and indicates their limitations.

Hypotheses and Research Questions

The hypotheses set out for study here focus attention on the qualities of system interaction during the innovation process and pose questions to draw out those characteristics which are conditional to increased system completion or to bring about dynamic cohesion within the system. The hypotheses pose a number of questions which will be addressed by the research. Each innovation component (EL, BC) is examined at various system levels / contexts for requisite system factors in the form of Infrastructure (I) Authority (A) and Consensus (C). Altogether 3 hypotheses have been advanced each addressing one system factor.

Hypothesis 1: Infrastructural (I) Factor

It is proposed that the level of success achieved by an educational innovation depends on the level of Infrastructural (I) capability actually available within the system for supporting the whole process of problem-solving in direct relation to the scope and characteristics of the

innovation itself and the degree of logical as well as perceived new behaviours demanded by the proposed change. The larger the scope and more complex the new behaviours, the greater the level of system capability required.

For this particular innovation under study a high level of I capability is seen to exist where:

(α) system members were able to demonstrate clear understanding of the essential new concepts and value orientation underpinning the innovation;

(β) the degree of system completion implied by the characteristics of the proposed innovation were correctly interpreted by system members;

(χ) system members demonstrate awareness and understanding of the importance of interdependence between the subsystems of organisational structures, people and resources;

(δ) system members were able and willing to develop linkages necessary to achieve that required level of system completion;

(ε) Such necessary development of linkages was seen to take place through the generation and co-ordination of interactions between all sub-systems and the innovation components in order to create within the system shared meanings as required through every phase of the problem-solving cycle, i.e. – conceptualisation, implementation, and evaluation.

(i) **Conceptualisation:** This phase deals with such specific components of the problem-solving cycle as:

- formulating an acceptable rationale on which assumptions about problem identification and solution prescription are based;

- clarifying and specifying problems and needs in a manner that facilitates correct interpretation of the nature and purposes of the innovation;

- drawing up of priorities of objectives on the bases of these established purposes of the innovation;
- creating a sensitivity to, and an awareness of the interdependence that is necessary between problems, solutions, purposes and priorities of objectives as conceived.

Effective conceptualisation is assumed to provide the necessary framework for a viable innovation.

(ii) **Implementation**

Implementation involves the input-throughput-output management process. Of concerns are such system attributes as:

- the capacity to maintain that quality of openness that seeks out adequate resource flow through all system levels;
- a high degree of inter-system connection and interaction;
- efficiency of throughput handling.

There are three phases in the implementation process namely:

(a) communication; (b) adoption; (c) operationalisation.

Each of these needs further clarification.

(a)Communication

This is the phase in the problem-solving cycle at which effort is focused primarily at generating awareness for the innovation elements including the specific requirements for implementation. The kind of planning and management strategy needed here is that which can stimulate and facilitate effective communication flow so that essential information about the innovation and its new behaviour requirements are made known to all who are involved in operating it at sufficiently early time. Such actors would include for this innovation, education officials at all levels, teachers, students, parents, employers and community in general i.e. all who will be affected by the innovation in one way or another. An efficient awareness-creating strategy therefore will make possible a wide communication flow through flexible and open information management, and also through an integrated information planning which can facilitate an inter/intra system dialogue. In this manner communication flows vertically as well as horizontally (Havelock and Huberman, 1977) in contrast to the linear top-down communication pattern characteristic of the bureaucratic system.

Through efficient communication, actors at all sub-system levels of education are made aware of their roles and specific tasks and responsibilities as logically required by the innovation elements. When vital information is made available better understanding and perception can be stimulated which may bring about interest and personal commitment by potential adopters. This is the 'interest' phase in Havelock's (1973) model when the client, having been through the initial 'awareness' phase, now actively seeks out the information about the innovation himself so as to learn more to enable him to decide whether to adopt or not. Even those actors outside the education system could be motivated to support the innovation if they are made aware of it. For example industries and business houses might contribute inputs for implementing the innovation if they were provided with the necessary information to guide their decision.

(a)**Adoption**

The adoption phase is considered critical to the problem-solving cycle because it is at this stage that planners and potential adopters engage in marshalling inputs necessary for implementing the innovation. More importantly it is the phase which involves actors in making the decision to go ahead, where the adopter crystallises his/her conceptualisation of what exactly he/she thinks is being adopted. Thus 'adoption' is a commitment to action and therefore a very significant phase in contrast to the 'passive' tendency of the adopter under 'normal' situations to go through precious problem-solving phases in a nominal manner, taking for granted someone else's problem-solving strategy. In a radically innovative situation adoption becomes significantly more important in the sense that it carries far more 'load' of clarifying what is to be done in the absence of any real 'pain – diagnosis – search' procedure.

Planners/adopters at each decision-making level are thus involved with different decisions/activities as are required specifically at their sub-system levels by the innovation.

Ministry officials for example need to engage in different adoption tasks from principals or classroom teachers. Relevant adoption activities include:

- elaboration of implementation procedures; i.e. time planning, role definition, task specification and sequencing;
- resource choice, trialling and acquisition/improvisation including money, materials, equipment, accommodation, personnel.

In initiating and sustaining these activities, actors at various system levels may be able to demonstrate how far they are open to the innovation. The essence of the adoption phase is that the process of interaction between the innovation and the actors becomes formalised in a manner that both the actors and the innovation itself undergo a change through this contact. Thus while the essential characteristics of the innovation are retained. The actors are able, during the adoption process, to make its forms suitable for their needs, context and skills. The planners in fact provided for this in the Blueprint where regions are recommended to adapt the innovation to suit their circumstances (Blueprint, 1985, p. 22).

It is for this reason that the capability for reviewing, 'evaluating' in Havelock's usage, adaptation and improvisation is so important because this is what the actors require to convert the innovation for their own use and so make it their own. This critical ability regulates the quality of openness by enabling actors to consider carefully before deciding to implement the innovation. In reviewing and selecting the resources for instance, they will be able to look first at what is available within their sub-system to determine its potentials for utilisation and cost-effectiveness before looking to other sub-system environments to derive their resource needs. In effect, the actors demonstrate their capability in making judicious selection for their own needs.

(c)**Operationalisation**.

This final phase in the implementation process is what Havelock and Huberman (1977) described as the throughput process when all inputs are brought together to a 'black box' where they interact in a certain manner to produce certain results, i.e. outputs. It is difficult to know what does go on in the 'black box' to yield the specific kinds of outputs but an insight into the process might be gotten from examining the quality, the management and pattern of interaction of inputs in order to ascertain what goes inside the 'black box' and how they are made to interact. Activities necessary for the operationalisation phase include:

- deployment of expertise and skills to roles and tasks: and deployment and utilisation of all resources, and exploitation of all potential specialist agencies and facilities.

In fact, while the adoption phase is more concerned with elaborating and planning final touches to the strategies, the operationalisation phase activates implementation of the innovation. All the three phases of the implementation process – communication, adoption and operationalisation – require to demonstrate a high level of the I factor to be present to enable the system analyse, synthesise and process all inputs in a manner that will maximise the quality of outputs.

(iii)**Evaluation**.

The last feature of the I factor to be considered is evaluation. It is through evaluation that progress in system growth and evolution can be adequately assessed. Central to evaluation is the need to establish a dialogue mechanism which is aimed at facilitating communication, among all sub-systems involved in the innovation, for the purpose of reviewing on a continuous basis the relevance and effectiveness of the input-through-output process. Thus ideas, materials and equipment are monitored for relevance; procedures are reviewed for effectiveness and the products from the innovation are assessed for adequacy so that they are not found deficient by prospective user sub-systems. This in systems terms, is the feedback

mechanism for system regulation. Evaluation therefore is very important to the innovation in two ways:

(ι) it enables the various innovating sub-systems to be constantly aware of their interdependencies in order to implement successfully;

(ιι) it makes possible through the feedback loop, necessary alterations and adjustments in ideas, decisions, materials, equipment, procedures, personnel and even innovation characteristics by correctly analysing, interpreting and applying reports from monitoring programmes.

The data seek to reveal evidence of:

- correct conceptualisation of the use of evaluation;
- degree of capability available for engaging in education tasks;
- actual evaluation activities carried out at various sub-system levels;
- the role of the CDC and its participation in innovation and implementation;
- actual usage of evaluation reports

Evidence will be sought from such techniques as monitoring, written reports, oral reports that may be available on the three elements of the innovation namely: vocationalised curriculum; continuous assessment; guidance and counselling.

This elaboration has argued that a requisite I+ system capability is seen to exist where the problem-solving configuration as required by the innovation demonstrates effective conceptualisation, effective planning and management of implementation and effective evaluation mechanism. Basing my analysis on system theory, I have further argued that ‘effectiveness’, in these three dimensions of the infrastructural configuration outlined here, is taken to mean a level of comprehension of problem and solution such that each system level and each actor can operate within a shared framework. ‘Effectiveness’ also means that each actor is in addition able to respond critically and creatively to problems and tasks in the specific context within which he or she works.

Hypothesis 2: Authority (A) Factor

The second hypothesis focuses on the authority elements operating within the system and has three proposals on the issue thus:

(i) In order to innovate it is critical that heads of government and decision-makers be seen to fully exercise their political authority effectively in support of the innovation in such a way that there is evidence of firmness of purpose at every stage of the process;

(ii) In order to generate relevant expert support for an educational innovation, professionals must also be perceived to have authority to formulate educational principles and practices such that there is provision for a clear sense of expert direction and objectivity to guide the innovation;

(iii) The innovation is more likely to succeed where political and professional leadership were seen to be mutually supportive in such a way that policy was informed by relevant educational principles and practices which in turn took place within the constraints of feasible policies.

Elaboration of the Authority (A) Factor

According to Havelock and Huberman (1977) it is the A factor which "gives energy, and direction to the problem-solving cycle", by ensuring that relevant and reliable support is continually available and that the innovation at every stage is being implemented as planned. An A+ configuration then becomes a critical component where the innovation elements and new behaviours are large and complex as we have in this case. At the political sub-system level a high degree of authority and support is seen to exist if actors were able at every stage to show approval and firm commitment through decisions, legislations, and other actions such as provision of resources necessary for directing effective implementation. Similarly at the

bureaucratic sub-system level it is required that actors provide administrative support to facilitate the problem-solving processes. The professionals would need to exercise relevant expertise in initiating ideas, laying down principles and providing appropriate leadership to guide innovation practice.

This model is developed further by this study to show that each authority level has potentials that can alter the I configuration in very important ways depending on the level of power support being exercised. Thus an A- configuration could distort and reduce an I+ problem-solving capability to a negative I-. Analysis of data elements will therefore be alert to such distortions. The exercise of various kinds of power and authority is indeed a crucial factor in the innovation process.

Hypothesis 3: Consensus (C) Factor.

The third hypothesis deals with the consensus (c) variables and proposes as follows:

(i) That for an educational innovation to succeed it is necessary that the system demonstrates a structural capability to generate consensus in such a way that the perception and attitude of policy makers are seen to be in consonance with those of other actors in their various roles in the innovation;

(ii) That sub-system members are seen to demonstrate a high level of commitment to the implementation activities.

Elaboration of the Consensus (C) Factor

Interest issues to be examined here will highlight the fact that consensus is achieved on the basis of negotiation of meanings between sub-systems and therefore depends on the provision of dialogue and feedback mechanisms to promote and reinforce inter/intra system interactions. When the perceptions and the objectives of the planners of an innovation match with those of the adopters/consumers a high degree of consensus is said to be available in the

system. In this relationship power sources reside in the different groups of adopters/consumers with whom the higher authority subsystem levels may need to negotiate in order to agree on common goals. These different groups include actors in schools, i.e. teachers and students, and in the community such as leaders, parents, employers etc.

In Havelock and Huberman's conceptualisation a C+ factor is valuable for easy implementation but where the innovation originates from outside the community consensus could be taken for granted provided the appropriate level of support is demonstrated in the I and A components. Thus, for the innovation such as is under study, implementation could start with a C- which can then be later upgraded through dialogue and negotiation provided adequate levels of I and A can be mustered. How far this is possible will be discovered later.

Research Questions

Each of these hypotheses throws up a number of research questions that have been investigated by the study. The first set of five are addressed to the testing of the degree of relevance and efficiency of the infrastructural (I) factors thus:

(ι) How far does the system appear to have accurately identified its problems and specified reasonable solutions to them?

(ιι) How far does there exist the management capacity for efficient marshalling, deployment and co-ordination of resource flow and utilisation in the system?

(ιιι) What evidence is there that the system possesses the expertise to effect and sustain implementation of each innovation component?

The next set of three questions are directed at the Authority (A) factors. These are:

(ι) To what extent can decision-makers in control of government be seen to exercise political authority in support of the innovation?

(ιι) How far do actors responsible for bureaucratic administration seem able to exert relevant authority in favour of the innovation?

(ιιι) To what extent are various professional groups of decision-makers in the system seen to exercise authority to guide the innovation?

The following questions were generated from the third hypothesis which deals with consensus in the system thus:

(ι) To what extent can the system be observed to have adequately exploited channels for negotiation to establish common understanding about the JSS innovation?

(ιι) How far is the system able to monitor, supervise and redirect effectively the different activities of the innovation?

(ιιι) How far can actors be said to be committed to the implementation of the innovation?

Research Methods

A range of research methods were used to explore the questions identified above. These include interviews, questionnaires, case studies and documentary evidence from official resources and literature survey. The procedure and various instruments as they were applied are described below.

Literature Search

Intensive library work (and much intense thinking because the synthesis being attempted is original) was needed to clarify and gain mastery of existing literature on theories about social systems, organisational change and innovation, development, vocational education with reference to the developing countries, continuous assessment, guidance and counselling and on evaluation. All these have been synthesised and applied to the study.

Official Documents

During my field work period in Ghana between September 1999 to January 2000, and also October 2014 to January 2015, it was possible to secure documentary materials from the Ministry of Education and other educational establishments in Ghana. These became the source of objective specifications of the innovation and also provided the record of events as they developed at different sub-system levels.

Interviews

Altogether fifty-five actors from different sub-system levels were interviewed during different periods of the fieldwork in order to elicit relevant information about the innovation in such specific contexts as the Ministry of Education (MOE), Ghana Education Service (GES), principals and school teachers, employers of labour, the self-employed in the informal sector, and parents. Although the primary intention in arranging these interviews was to seek out the understandings, the goals and priorities of these groups of actors at different sub-systems with regard to the innovation, it was impossible for the researcher to approach these encounters without some kind of pre-conceived questions. The strategy however was to keep the question at a general open-ended level from which the discussion could then be further explored during the interviews. The semi-structured interview schedule can be found in appendix.

It was possible to tape-record several of these interviews especially those with colleagues who knew me well. However, the majority of the interviewees outside MOE were squirmish about being tape-recorded, an attitude that was not connected with the highly repressive tendencies of the military regime between 1984 and 1987. Any talk that was in any way critical of Government was regarded as punishable treason as two journalists found to their cost. I therefore made notes which I filled up soon after each interview. I was careful not

schedule more than one interview a day where recording was not possible to allow sufficient time for note making at home. In addition to the first phase of interviews, I also had the opportunity during the case studies in schools to engage in further interviews with principals and school teachers whom I met at base. These form part of the case study reports.

Questionnaires

The questionnaires provided vital complementary evidence in quantitative terms to the data from the interviews, documents and case studies. It was thus possible to ascertain the spread of a certain view as held within the four target populations which included education officials, principals and teachers, students and parents. Each group of questionnaires focuses on certain key questions of particular relevance to the group but there is also a common set of questions directed at clarifying the understanding of each group of the purposes of the different innovation components.

(ι) The questionnaire for parents asks questions about:

- awareness of the new national policy on education (NPE) and the aims of the innovation;
- career awareness and preferences among parents; and
- opinions about the new JSS structure among parents.

(ιι) The questionnaire for students focuses on the following issues:

- understanding of the new curriculum and continuous assessment;
- career awareness and career choice;
- opinion about the JSS structure.

(iii) For education officials among whom are MOE Inspectors, GES Supervisors, and teacher trainers in Colleges of Education, the questions were directed at:

- interpretations of the provisions of the innovation components;

- involvement in awareness creating activities;
- assessment of infrastructural provision;
- involvement of the world of work in innovation implementation and
- opinion about the new JSS structure.

(iv) Teachers were asked similar questions as education officials except for the details of the section on bio-data.

Because the research methods were deliberately open in order to admit varying shades of opinion about the innovation the questionnaires were not constructed until after preliminary field investigation was carried out in October 1999 and also in October 2014. The issues that emerged from this initial encounter with actors at different sub-system levels were to be used for comparing the objective specifications of the innovation as proposed. Altogether forty-five people were initially interviewed made up as follows:

10 education officials from MOE and GES; 3 principals; and 7 teachers from schools;

5 students and 5 parents;

15 people from the informal labour sector, made up as 3 farmers, 2 welders, 3 carpenters, 1 tailor, 1 sculptor, 1 printer, 2 electricians and 2 mechanics.

10 more people were interviewed in October 2014-January 2015.

Owing to time and transportation constraints, as well as financial costs, and the sheer workload involved, these interviews were conducted within Koforidua Urban Centre in the Eastern region. The questionnaires were then designed, tested and refined between September and October 1999. Three schools within Koforidua were used for the testing. In order to update data new questionnaires were also tested in three schools in Greater Accra region in October 2014. Care was taken to ensure that subjects were truly representative of all sub-

systems. Thus in selecting the 14 schools in which the questionnaires were to be administered the following considerations were made:

(α) a representation of all 5 educational zones in the region;

(β) a representation of urban and rural schools;

(χ) a representation of single sex schools;

(δ) a representation of schools with equipment and those without;

(ε) the two Government Colleges in the region, a mixed school in Suhum and all-female school in Koforidua.

Five hundred and thirty questionnaires were administered to a randomly selected student population who were in their final year of the JSS system and therefore were most involved with the innovation and were supposed to know more about it than any other group of students in the schools. I had a 94% (500) return.

A stratified selection from among teachers was made to involve respondents representing the administrative leadership in the schools, i.e. the Principal/Vice Principal; the various innovation components, i.e. pre-vocational subjects, continuous assessment and guidance and counselling; the sciences and mathematics as well as languages and humanities. Altogether 154 questionnaires were administered, 11 in each of the 14 schools. One hundred and thirty-one, i.e. about 85% were returned. In all the schools but one the Principal or Vice-Principal accepted to administer the questionnaires according to my guidelines. At Asokore School, Koforidua where the principal would have nothing to do with me I had to approach the teachers individually to administer the questionnaires myself while one of the form masters for class 3 accepted to administer the student questionnaires.

Ten questionnaires were sent to each of the 5 Zonal Offices of both the Ministry of Education and the GES in the region. The response rate from both organisations were very

disappointing. The GES returned barely 32% (16) out of the 50 it received and the MOE only 34% (17) of its own 50. Two higher institutions for the training of secondary teachers, i.e. the University of Cape Coast, the university of Education at Winneba had a total of 50 questionnaires and returned 32 (64%). In these places I had had to approach most subjects individually although in some cases it was possible for me to entrust the questionnaires to the Zonal Officers in charge or Heads of Departments or willing contacts among lecturers in higher institutions.

Two hundred and fifty questionnaires were randomly distributed to parents in all five education zones in both urban and rural areas and across sex and professional groupings. Sixty percent (150) were returned, a tribute to the effort and commitment of my colleagues in personally chasing up the respondents.

Because most of the information required from the questionnaires was for simple proportions and frequency of response, it was easy to work these out from simple hand tallies. Details of this will be shown in the tabulation and analysis of the responses. As was stated earlier, the questionnaire evidence is used as a complement to data from other sources since the quantitative instruments do not always focus on the process of interaction or unanticipated outcomes of innovation as are the main thrust of this study.

Case Studies

In accordance with the illuminative evaluation procedure adopted for use here the purpose of the case studies was to carry out an in-depth investigation to see how ‘instructional system’, i.e. the planned innovation was being operated in the different learning milieu represented by the selected schools. The case studies permitted the researcher to undertake an analysis of concrete situations in the implementation process and to derive from the questions about the logical plans of the innovation. This procedure affords a feedback channel as issues

raised at the grass-roots subsystem of the schools are brought into confrontation with the plans from the superordinate sub-system. The investigation was also intended to reveal the extent of the internal interdependence and cohesion achieved by each school sub-system in order to extend this by comparison to the level of external interdependence between schools and the regional education system as a whole. The studies were carried out in two phases spanning September 1999 to January 2000 and October 2014 to January 2015.

Phase I Case Studies September 1999 – January 2000

Timing:

The case studies were carried out in the month of September 1999 a period judged to be most suitable for data collection in the schools for the following considerations:

(ι) the first term of the school session, September to December 1999, was unsettled for schools because new postings of Form one students and new teachers were still going on;
(ιι) until the meeting of the Commissioner for Education and Principals in November 1999, there was general uncertainty about the status of JSS since the syllabuses, materials and equipment were still not available.

Given these conditions it was decided that September, though rather too busy with activities, offered the best time for the case studies.

The Schools:

Altogether seven schools were used for the case studies which included six state schools and one private school. It should be noted that all schools in Eastern Region are government managed. Five criteria were used to select schools for study.

(ι) One school was selected from each of the five education zones in the region;
(ιι) Each school must have been issued with equipment for Introductory Technology between 1986 and 1987;
(ιιι) Rural and urban sub-systems were each represented by two schools in the study; a third semi-urban sub-system was represented by one school;
(ιϖ) The selection also had representation for all female, all male and co-educational schools;
(ϖ) One school was included to represent private schools.

The bases for selection were education zone, rural/urban, equipment, sex and private school representation. It needs to be pointed out that these criteria were in no way judged to be exclusively essential to the success of the innovation.

The education zones are: Koforidua, Suhum, Kibi, Aburi, Asokore, Asuboi, and Tafo. Suhum is essentially rich agricultural zone whose headquarters, Suhum town, has been very slowly developing bureaucratic characteristics. The all-girls school in this study, Koforidua Girls' School is sited about 5 kilometers away on the outskirts of the township. Kibi zone is also predominantly an agricultural rural setting and so is Koforidua zone in spite of the presence at the headquarters, in both areas, of the College of Education and All Nations University. Koforidua is a typical sedate bureaucratic urban sub-system while Suhum represents the boisterous and vibrant informal commercial sub-system.

Techniques:

Activities for the case studies were planned to include interviews with key members of staff and students, observation of classroom activities, collection and examination of documentary evidence from official school records wherever possible and observation of the general atmosphere in order to get the feel of the context under which the innovation was operated. These seven schools were also among a wider target group of 14 schools to whom questionnaires had been administered just before the case study early in the month. It was hoped that the interview would get the views of different key actors in order to gain perception from different value positions and roles within the human sub-system of the schools. Thus, the Principal or Vice Principal represented the leadership and highest decision-making authority in the school. The guidance counsellor, continuous assessment master, subject masters in any of the vocational subjects represented the three innovation sub-systems that are of particular concern in this study. The students who were 'the guinea pigs' of the

innovation were also considered to be important contributors. The interaction between all these actors was subject to observation to ascertain the degree of cohesion that existed among them for problem-solving.

Classroom observation was intended to permit the researcher to watch the educational innovation interact with students and teachers within typical classroom situations. It was hoped this would reveal how the new curriculum as well as continuous assessment and guidance and counselling were being implemented and also give assess to samples of student work on a random basis. The level of facilities available for implementation was also to be established.

Bearing in mind the research need for openness certain questions were tentatively designed to facilitate the conduct of enquiry and aimed at eliciting information in accordance with the analytical model employed by the research about the level of infrastructural capability, authority and consensus existing within the schools to enable system development to take place as planned. The questions were grouped in three clusters reflecting the three dimensions of the IAC model. The approach at this level of enquiry was eclectic combining techniques as was appropriate. The illuminative approach favoured by Parlett and Hamilton (1976) for example, was used for investigating school environments and antecedents. Taba's (1962) objective evaluation model was applied to the examination of the curriculum and its operation in the classrooms. The analysis of curriculum materials was based on the model (Eraut, 1975) while the strategy for classroom observation was adapted from Walker and Adelman (1975) and Delamont (1976). A general guide worked out for data collection during the case studies including interview schedules and details of participating schools can be found in appendix. This time the number of schools was reduced to three – two state schools

and one private school; one school from the urban Greater Accra region; one from rural area in Northern region and the other one from rural area in the Eastern region.

The level of implementation of the innovation in all state schools studied in September 1999 was such that the data generated from three to four visits to each of the seven schools was inadequate to support any meaningful analysis to be made. Since from available evidence it was reasonable to conclude that the innovation by September 1999 had existed for some years, it was considered essential that the researcher should return the following session to repeat the study with the hope that there would then be an innovation to study.

Phase II Case Study: October 2014 - January 2015

This took place throughout the month of October 2014 in order to update data. The same strategy of interviews, documentary analysis and classroom observation was used. Some reports of the case studies are in appendix

Newspapers

Newspaper reports provided a very useful secondary source of information, representing mainly public opinion about the innovation. In a system where the pace of bureaucracy tends to be slow even the government often resorts to the use of the media to put across some of the views as was the case in Ghana. Such sources have of course been used only when their veracity have been unequivocally supported by pieces of evidence from other sources.

The primary research question is: 'to what extent has the Junior Secondary School (JSS) reform in Ghana realised its objectives'?

This is a broad question, which sets the scene and provides some focus. However, as seen from the discussion above one is dealing with the outcome of a major policy reform pushed through in the context of a strong central authority determined on rapid

implementation, but which is played out in numerous and highly disparate locales and communities throughout Ghana.

So it is clear that some of the issues and questions arising will operate at the national level, and others at the local level. To some extent, though not entirely, this division of scale correlates with the employment of documentary research on the one hand and the empirical research on the other. But first we need to identify **key issues** and the **operational questions** related to them. The following are proposed.

Issues

Key issues have been identified relating respectively to: policy, curriculum, teachers, resourcing and effective schooling.

The issue of policy

As has been outlined above the decision to move to a major reform involving the introduction of a junior secondary sector was a radical one in the context of Ghana's education history, within which selective secondary schooling had acquired a strong position.

From this, three potential questions arise:

- What were the **objectives** of introducing a junior secondary sector as evidenced in the official documentation of the Government of Ghana?
- How has the policy of introducing this sector been **planned** as evidenced in the documentation of the Ministry of Education/Ghana Education Service and the views of selected professionals?
- To what extent has the **process** of implementation assisted, or otherwise, the realisation of the original objectives?

The addressing of the second and third questions will have to take on board the influence of a number of reforms/projects arising since 1987, the latest being FCUBE, and often involving development agencies and/or NGOs with their own agendas.

The issue of curriculum

'Curriculum' lies at the heart of the educational process. Given the radical nature of the 1987 reform one would expect a distinct shift in curriculum structure and emphasis towards a technical vocational bias in the JSS. Since Ghana has been a focus for significant research and comment in respect of this area of study/training (e.g. Foster, 1965; Oketch, 2007; Akyeampong, 2014) there is some grounding for the following potential questions:

- How was the curriculum of the JSS **determined**, and what is its detailed composition?
- How do interested parties (students, parents, teachers, administrators, and employers) **perceive** the JSS curriculum and its record, especially in respect of actual and potential employment?
- How does the current curriculum of the JSS and its outcomes **relate** to issues and findings raised by other writers/researchers (Foster, 1965; Oketch, 2007; Akyeampong, 2014)

The issue of teachers

Teachers find themselves at the interface between providers and users of schools, and are therefore subject to pressures from both directions. Consequently the quality of teaching could be a major factor in enabling, or otherwise, the objectives of the JSS reform to be realised.

The following potential questions arise:

- What provision was made in the 1987 reform for the **adjustment** of teacher education and training programmes to prepare both trainee and existing teachers for the new situation?
- To what extent were teacher initial education and training programmes **actually reformed** to provide appropriate training for potential JSS staff, especially in the field of technical and vocational education? How were the trainees prepared?

- What was the nature and quality of **in-service training** provided for serving teachers who were appointed to JSS?

The issue of resourcing

Like most developing countries, Ghana's educational system is under-resourced overall. However, the 1987 reform, based, as it was on the idea of 1974 had, as has already been noted above, substantial cost implications.

The following potential questions arise:

- Has the resourcing of the JS Schools since 1987 been commensurate with their having **sufficient** human, physical and financial support to enable the realisation of objectives proposed by the reform?
- Has such resourcing as has occurred been distributed and devolved in such a way as to **minimise disparities** in the quality of JSS provision from one part of the country to another?

Documentary Research

Here one may recognise a number of categories of documentary sources, all of which have been, or will be, utilised by the writer. This range may itself be divided into primary and secondary sources. Here the writer will review documentary sources consulted prior to undertaking field research. Those encountered in the field will be discussed in relation to the analysis in chapter 5. We will begin with the latter, as primary sources relate more closely to the field research to be described below.

The first category here may be termed general and contextual and is exemplified by the kind of sources used to inform the first chapter of this thesis. They address such aspects as colonial legacy (Curle, 1970); economic development (Toye, 1991; Cobbe, 1991); the international discussion relating to the thrust for basic education (Colclough, 1993; Little et.

al., 1994); and the junior secondary school in particular (Brock, 1984). Such sources have been utilised by the writer in order to try to place the Ghanaian experience in an international context, and of course additional material of this kind has continued to be sought right through to the writing up process.

The second category is that relating to the Ghanaian national context, and within that the educational dimension. Some are to relate to particular aspects and issues such as: indigenous education (Bartels, 1975; Dzobo, 1975); interfaces between traditional and western education (Grindal, 1972), church and state (Anim, 1966), history of education (Graham, 1975) and gender (Stephens, 1998) and (Sutherland-Addy, 2002).

With respect to the third category, junior secondary schools in Ghana, publications are very few - hence the justification of this programme of personal research, and the thesis that arises from it. Those identified to date are utilised in the further discussion of issues, below (Peil, 1995; Scadding, 1989; Oketch, 2007; Little, 2010; Akyeampong, 2014; Adu-Gyamfi et al, 2016).

The fourth category of secondary source has to do with the **issues** identified above. These will be taken in turn, with just one or two examples of sources discussed.

Policy

The secondary literature surveyed by the writer concerning descriptions or critiques of the Ghana government's policy as evident in the 1974 and 1987 reforms, is mainly extant in the form of agency papers such as from the World Bank, (1994; 1995), USAID/Ghana (1997), UNICEF (1993) and African Union (2007).

According to the World Bank publications, owing to public funding constraints and the general shift to what is described as a demand-oriented, community-based approach to provision, communities are now required to contribute substantially towards the cost of

educating their children. This in the government's view, is meant to "ensure financial sustainability" of the education policy (ISSER, 1993, p.15). The costs are not only monetary: communities must also provide relevant labour inputs for structural works.

Many of the problems cited in the GLSS surveys were foreseen by Scadding (1989) who focused on the fact that the policy of JSSs being at least partially funded by the community would create severe pressures and greater disparity. Apparently part of this rationale was to foster the teaching of vocational and cultural subjects, with parents, local businesses and churches becoming directly involved. According to Scadding, because of the lack of regulatory powers, such an approach would mean a greater likelihood of skills training for paid employment for boys, while girls would be seen as suitable for domestic service. This she suggested would be intensified by the new equipment for vocational education being mainly in the areas of metalwork and carpentry. Such an issue is, of course, the kind of disparity the writer will be testing out in his field work, to see whether Scadding's contention that:

> *The last major concern of the JSS initiative relates to the inequalities that are likely to arise in the accommodation and facilities available in each school, due to the importance of community funding* (p. 47),

has become a real issue ten years later. It would appear that the obvious connection between community funding and decentralisation has attracted the interest of donors such as the World Bank and DFID and there are implications here to explore.

Angela Little also writing on *Access to Basic Education in Ghana: Politics, Policies and Progress* (2010) argues that the most radical reforms of basic education in the second half of the twentieth century are generally agreed to have been those set out in the report of the Commission chaired by Professor Dzobo in 1973/4. Little argues that:

> *"Most commentators on the history of educational policy in Ghana agree that each successive policy text owes much to the policy themes set out in earlier text.*

> *Recurring policy themes include the provision of free education and the need for practical, vocationally-oriented education. The call for free primary education goes back to at least 1951, and that for practical, vocationally-oriented education as early as 1847, during the British colonial period. Recurring policy concerns include access, quality and costs, with varying emphases at different points in time"* (Little, 2010, p. 1).

Little argues that planning and implementation of the 1987 reforms were pushed through simultaneously by the PNDC revolutionary military government through the creation of awareness programmes, district assemblies' governments involved in implementation of large scale infrastructure programme and significant financial resources for the reforms were provided by the World Bank. However, the education bureaucrats were not enthusiastic implementers and the middle classes resisted passively (Little, 2010, p. 45). This is the kind of policy and resistance to the implementation the writer will be testing out in his fieldwork.

Curriculum:

The main issue here has been that of the vocational and technical orientation of the JSS reform, at least as evident in the policy and rhetoric of the day. Here four particular sources are worthy of some comment. They are Foster's *'The vocational school fallacy in development planning'* (1975) A paper by Moses Oketch on '*Education policy vocational training, and the youth in sub-Saharan Africa'* (2007) is also of interest as well as a paper by Kwame Akyeampomg on '*Reconceptualised life skills in secondary education in the African context, lessons learnt from reforms in Ghana*' (2014) and also a paper by Adu-Gyamfi et al on '*Educational reforms in Ghana: past and present*' (2016).

We will first discuss the Foster argument. Foster (1965) argues that it was popular belief that schools can readily be modified to meet new economic needs and, especially, to accord with the intentions of social and economic planners. However, he argues that schools are particularly clumsy instruments for effecting immediate large-scale changes in underdeveloped areas. He notes that while the emphasis in Ghanaian education has been

placed on vocational and agricultural training in all documentary sources, there is a relative absence of such elements within the actual provision of curriculum. Was there any serious attempt made to implement schemes for agricultural and vocational training in the schools? If so was it regarded with disfavour in colonial times? As already noted in the first chapter of this paper, this argument can be dismissed in the case of Ghana because the development of academic secondary schools upon the British model was the result of African pressures for such schools. It is likely that such pressures resulted from a combination of perceptions of status, and practical considerations.

An examination of opportunities within the European dominated sector throughout the colonial period reveals that, relatively, there was a greater demand for clerical and commercial employees than for technically trained individuals. Nevertheless, opportunities existed in technical fields and agriculture, but they were inferior to the other alternatives. Access to most of the highly -paid occupations was achieved through experience at academic-type institutions.

Foster argues that a major irony of the situation is that while proponents of technical education were criticising the neglect of technical provision in the schools, the products of such technical institutions as existed were often experiencing difficulties in obtaining employment. Often those persons entered occupations unrelated to the training they had acquired. It could be argued that unemployment among these technical graduates has arisen as a consequence of disparities between rising output of schools and low rate of expansion in the modern sector of the economy. It is always going to be difficult to effect a correspondence between curriculum and economy, and wastage of skills must always be considered in assessing programmes of vocational training in view of the limited resources available. The writer seeks to test this out in the case study schools.

Foster argues that:

> "*no amount of curriculum juggling was likely to produce the kinds of mass results anticipated by the proponents of technical, vocational, and agricultural education. That a great deal of training must be developed outside the schools through the use of auxiliary institutions, with special vocational institutes being created in particular cases where their endeavours can be closely meshed with on-the-job training and with the actual manpower requirements indicated by the market for skills*" (Foster, 1965, p. 143)

In other words he was very mindful of the different economic contexts of every locality.

A paper by Oketch (2007) is relevant in this thesis because it has to do with vocational training and the youth and the title is '*Education policy vocational training, and the youth in sub-Saharan Africa'*.

Oketch argues that a lot of the arguments over vocational and technical education and training assume that vocational training is more specific to job entry than general education. Oketch argues that:

> *"this assumption may be right with vocational education curriculum of 30 years ago, but wrong today. Today vocational education is seen as training for future training; not as a way to facilitate job entry, but as a way to facilitate vocational-specific skills over a life time"*
>
> (Oketch, 2007, p.220).

Oketch recommended among other things that TVT should select its potential students from the same pool as general education; TVT has to be seen as a viable pathway that along the way practicality can join with general education and vice versa; TVT should include instilling critical skills, communication skills as well as numeracy skills; and also focus on skills that are of lifelong nature rather than dead-end skills (Oketch, 2007, p. 225).

A paper by Akyeampong (2014) is also relevant in this thesis, the title is '*Reconceptualised life skills in secondary education in the African context, lessons learnt from reforms in Ghana*'

Akyeampong argued that during the secondary education reforms in Ghana, life skills were seen as providing youth who would be entering the labour market with technical and vocational skills. The technical subjects (e.g. building construction, technical drawing, carpentry and joinery), Vocational Studies (e.g. metalwork, home management, clothing textiles), and Business Studies (e.g. business methodology, commerce and business management) all gained prominence in the re-configured secondary education curriculum. He argued that early on the implementation of the curriculum it became abundantly clear that secondary schools would find it difficult to prepare young people for world of work because the best way to learn work-related skills was through a combination of classroom learning and work experience.

Akyeampong also argued that:

> *"for a start secondary schools in Ghana faced serious logistical limitations in addition to teacher supply and teacher training challenges all of which undermined the quality of vocational and technical subjects. There was hardly any reference to the idea of life skills education"*
>
> (Akyeampong, 2014, p. 230).

However, Akyeampong recommended among other things, that changing secondary education teachers' practices to reflect the goals of a 21st-century life skills development agenda would require teachers' pedagogical practices in order to provide powerful images of teaching and learning, exemplifying creativity and critical thinking (Akyeampong, 2014, p.231).

A paper by Adu-Gyamfi et al (2016) is also relevant and the title is '*Educational reforms in Ghana: past and present*'

Adu-Gyamfi et al argue that their historical study addresses the inconsistency in the educational policies of Ghana focusing on the impact of secondary school education. The

authors noted the persistent adjustment of educational reforms witnessed in Ghana whenever there is a change in government. The authors argue that:

> *"reforms introduced by governments comprise of two types of implementations, first there are reforms that cut across the length and breadth of the country without any form of biases for example the FCUBE Programme and secondly there are radical reforms where the government might want to play "some politics" with reforms. This is where selected sectors or places in the country become beneficiaries of reforms"*
>
> (Adu-Gyamfi et al, 2016, p. 159).

Adu-Gyamfi and others argue that when technocrats initiate reform process the intentions although could be political should stand the test of meeting the common aspirations or interest of society. The authors suggested that politicians should help manage the reforms but technocrats or individuals with specialised skills should have a critical say in policy formulation (Adu-Gyamfi et al, 2016, p. 171).

Teachers

It is obvious that the quality of teaching provided in the JSS sector in Ghana will be a major factor in influencing the record of the 1987 reform on the ground. Shortly before that reform, in 1986, the report of a Conference on *Educational Priorities and Aid Responses in Sub-Saharan Africa* was published (Hawes & Coombe, 1986), within the chapter contributed by Williams on 'African education under siege', he highlighted the issue of unmotivated teachers, citing such issues as the low value and intermittent payment of salaries, 'moonlighting', absenteeism, multiple employment and general poor performance:

> *Contemporary management structures in education are not always adequate to check this - the teachers normally cannot be removed or disciplined by school heads or local boards of management. They have thus become non-accountable to those most affected by a poor level of performance - parents and the community. There are widespread complaints that teachers no longer deport themselves with the same commitment to their jobs as hitherto. Alternatively qualified teachers may resign, causing high wastage rates and forcing governments, which once seemed to be getting on top of their*

> *teacher supply situations to revert to the employment of untrained teachers. In Ghana for example, the proportion of untrained teachers rose between 1979-80 and 1982-83 from 44 per cent to 46 per cent at primary level, and from 28 per cent to 30 per cent at middle school level* (ibid. p. 97).

As in most other Sub-Saharan African countries the legacy of the past in respect of the nature and location of teacher training is extremely disparate. There are 38 teacher training colleges in Ghana, each with very distinctive origins and cultures, and they have been operating in what may be loosely described as an 'unreformed' way in relation to the advent of the JSS sector in 1987.

However, this does not mean that the Government of Ghana has remained unaware of, and unresponsive to, the critical need to reform the education and training of teachers, and important work has been going on at the University College of Education, Winneba for some years now with a view to upgrading the quality of both teachers and teacher trainers. During the fieldwork in Ghana, the writer investigated the documentary evidence at Winneba and interviewed selected staff members with special reference to the connection between their work and the JSS sector in particular.

As far as documentation made available to the writer is concerned, reference may be made to the material outcome of a National Teacher Training Conference held at Winneba from July 28 to August 1, 1997, which was prompted by the advent of the FCUBE programme. This outcome was in the form of two volumes: a) *Proceedings* and b) *Proposals on Teacher Education Policy*. These proposals were endorsed in the Ghana Ministry of Education (MOE) *Operational Plan*, published in November 1997. The writer examined all these documents during the fieldwork period in Ghana, with a view to abstracting and analysing references to the junior secondary sector. In January 1998 an *Executive Summary of Proposals on Teacher Education Policy* was written by Dr K. A. Awuku of The University

College of Education, Winneba in order to inform a Teacher Education Division Mapping Workshop held the same month. While Awuku's paper details fairly radical reforms to initial teacher training he does not mention anything specific to the junior secondary sector.

It must be remembered that the FCUBE programme of Basic Education is now under way, and does not differentiate as between primary and junior secondary. It is a nine-year programme of basic schooling. Some idea of how the radical reform of initial and in-service training might be phased in over a period of 8 years, is provided in a stimulus paper for the aforementioned Workshop (28-29 January 1998) by Brock et al. (1998). Again, the issue of JSSs is not mentioned.

Resourcing

To the extent that this issue is a matter of official documentation it was dealt with mainly in the field and is therefore discussed in subsequent chapters below.

Empirical Research

General Considerations

The documentary and empirical dimensions of the research are designed to complement each other, providing support from existing information or generating new data to test the situation however as the case may be.

As indicated at the beginning of chapter one, the main component of field research was to examine three case study schools. Within these case studies, both pupils and teachers were surveyed, so that the issue of choice of qualitative technique also needs to be discussed here. Data also need to be obtained from interviews with educational personnel at national, regional and district level. All of this is in order to be able to evaluate most effectively the three schools in respect of the key research question: to what extent has the 1987 junior secondary school (JSS) reform in Ghana realised its objectives?

Case Studies

Robert Yin argues that 'every study of entities qualifying as objects (e.g., people, organizations, and countries) would then be a case study, regardless of the methodology used) (example, psychological experiment, management survey, and economic analysis) (Yin, 1994:17).

The case study approach can be then summarised broadly as aiming to understand both a particular phenomenon and the context within which the phenomenon is occurring in the behaviour of a particular group of people in natural settings. It is therefore employed in the present study because the nature of the case in question is situational and influenced by happenings of many kinds in the conditions of the context.

This writer's reason for selecting the case study method for this research is not to seek for better understanding of a particular case but to provide insight into the focus of his inquiry, to pose several explanations for the one set of events, and to indicate how such explanations may apply to other situations.

Understanding a human activity requires that 'we look at its development over time and its environment, at the configuration of social factors that make up the situation in which it occurs, and the way in which these factors interact' (Hammersley, 1989:93). It is argued by the same author that the case study is well suited to facilitate this understanding. The case study approach has the potential to produce much more detailed information about a case than would be gathered using statistical methods.

On the other hand, Hammersley (1992) argues that to say that the case study offers a weaker basis for generalisation to large, finite populations than survey is not to say that it provides no basis for such generalisation of its findings. For Hammersley, statistical sampling is one useful way of providing for generalisability, but it is neither perfect nor the only way.

Thus, the findings of the present study may or may not be generalisable. It neither denies nor asserts that these findings are representative of the population. Although the case the writer studied cannot be seen as a basis for generalisation in terms of provision of the education innovation on which the study is focused, that is not to deny that it *may* be representative. Apart from the difference in the content and teaching methods owing to different geographical situations, there cannot be much difference between JS schools in urban and rural areas. This is due in part to the highly centralised uniform system of Ghanaian education. As the focus of the present study will be on the teachers and pupils' views, it pays attention to internal operation rather than external factors, which vary depending on the local situation surrounding the school. Thus the case dealt with in the study is not very particular or special and the findings may be considered representative and relevant to other cases.

Therefore, in order to balance the relative weakness of the case study approach in the above respect, this writer used in addition several other methods of data collection in order to avoid research bias.

Unit of Analysis:

The unit of analysis, or the 'primary focus of data collection' (Patton, op cit., p.166) in this study is the junior secondary school, its pupils, teachers, and those responsible for district, regional and national delivery. The selection of these groups as constituting the unit of analysis is tied to the research questions of the study, elaborated in some detail above, but it must also be remembered that each JSS in Ghana is operating in a particular context. This has been well illustrated by Margaret Peil in her paper as *'Ghanaian Education as seen from an Accra suburb'* (1995).

Peil's case study is of education in the Accra suburb of Madina, undertaken in 1993. She indicates clearly the context of a rapidly growing area of urbanisation with 'three large

complexes of government primary and JS schools … 'This is an area where skills can be marketed and in respect of the people in Madina' surveyed by Peil:

> *Many said that they had learned their skills in school, though for those who only attended middle school this seems unlikely. However, there is now a wide range of courses after middle school/JSS, so these school leavers can prepare themselves for the job market*.

This would seem to imply that, in the context of the Madina labour market, JSSs may have a pre-vocational rather than a vocational role. Also, in this context Peil found that if some amount of local employment was available then a population of youngsters would prefer to make money from petty trading without a JSS certificate …' However, she also found a residual support among parents in Madina for the formal system:

> '… *few Madina parents fail to provide at least JSS for their children. They are often critical of the system, but they are convinced that their children need it. Many want to believe government promises that the new JSS will pay off in opportunity* …'

Given the relative buoyancy of Madina's local economy, to some extent related to its location, it will be interesting to see how the writer's three case study schools, in very different contexts compare with it.

Interviews:

The interviews formed the central data pool for this study. The reason for this is, as noted by Yin (1989): 'overall, interviews are an essential source of case study evidence, because most case studies are about human affairs. These human affairs should be reported and interpreted through the eyes of specific interviewees' (p.90).

Of the two categories of interviews - 'exploratory interviews' and 'standardised interviews' (Oppenheim, 1992, p.65), this study utilised the exploratory interview technique. For, as Oppenheim suggests the purpose of the exploratory interview is essentially to develop ideas and research hypotheses rather than to gather facts and statistics. It is concerned with

trying to understand how ordinary people think and feel about the topics of concern to the research. For this reason the interviews were not highly structured.

Questionnaire:

In this study, a questionnaire was given to all JSS 3 pupils (14-15), and teaching staff at the junior secondary schools participating in the study: that is to say, the students and teachers involved at the end of the programme.

In designing the questionnaire for use as an added source of data, the researcher was mindful of four categories of consideration: understanding, construction, motivation, and ethics. The first consideration meant that the questions asked needed to be understood by both the researcher and the respondent. This means that the questions were based upon constructs revealed, and formulated and written in a relateable manner. Oppenheim (1996) writes in the preface to his *book Questionnaire Design and Attitude Measurement* that 'the world is full of well-meaning people who believe that any one can write plain English and has a modicum of common sense can produce a good questionnaire.' (vii). He goes on to show the folly of these 'well-meaning people' by illustrating the complexities of developing a credible questionnaire. Care must be taken from the beginning until the end; from formulating the questions to handling to the respondents.

Observation:

Direct observation is recognised as an important aspect of qualitative methods (Burgess, 1984; Delamont, 1976; Silverman, 2000). In case study that is dependent on self-reporting of practice and views, corroborative evidence lends strength to the statements and interpretations made.

Cohen and Manion (1989) outline a dichotomous view of observational strategies: participant and non-participant. The question for this research was whether participant or non-

participant methods were more appropriate to the questions of this study. The decision was made to utilise non-participant observation for the following reasons:

- The central focus of the study was to gain an understanding of conceptions of JSS reform held by the pupils, teachers and others. This is largely a cognitive process, rather than an interactive one. For that reason, the interviews proved to be the central method of data collection.
- Limitations of time at the case study site precluded the time necessary to work into the culture of the school as a participant observer.
- Non-participant observation provided as much information as a participant position would have for the type of activities being observed (staff meetings, selected classes, district and regional administrative activities).

Generalizability

There has been considerable debate on the generalizability of qualitative research. Ward Schofield (1990:208) argues that there are three common strands in recent writing on the generalizability of qualitative research: the inappropriateness of universal laws; the view that studies of one context can inform understandings of another context; and the importance of 'thick' description. At one extreme, Denzin (1983, cited in Ward Schofield) rejects generazability. Other approaches to the generalizability of qualitative research, as summarized by Ward Schofield (1990) encompass, for example: the concepts of fittingness (Guba and Lincoln, 1987), comparability and translatability (Goetz & Lecompte, 1984), naturalistic generalization (Stake, 1995), multisite qualitative studies, the case survey method (Lucas, 1974; Yin & Heald, 1975; Silverman, 2000), the qualitative comparative method (Ragin, 1987), and meta-ethnography (Noblit & Hare, 1988).

Research does not have to be generalizable to be relevant. As Wolcott (1995:175) puts it*: Each case is unique, yet not so unique that we cannot learn from it and apply its lessons more generally*.

Ethical Issues

Before going into the issue of case studies in more detail, it is necessary to consider briefly the issue of ethics in relation to this research:

> *'Ethics has dealt with how one treats those individuals with whom one interacts and is involved and how the relationship formed may depart from some conception of the ideal'* (Smith, 1990, p.260).

As this researcher believes in the value of individuals, and necessity for the research to be an exercise in increasing knowledge for the participant, then the strategy and methods selected must conform to those expectations as well. It has been argued by Elbaz (1990) that case study, as a methodology, is a means not only of philosophical depth, but can also be perceived as an ethical means of interaction between practitioner and researcher, perhaps even empowering in its outcomes.

However, for ethical purposes, pseudonyms have been used for the pupils, teachers, schools and the towns in which the JS schools are situated, to protect the identity of those who participated in the research. Most of the pupils wanted their real names to be used. This, however, would have made both the pupils and their families too identifiable.

Data Analysis

The interviews were analysed following a thematic process (Braun and Clarke, 2006). After familiarisation with the data, which was basically a manual process, the coding stage was carried out by means of the Nvivo software package. All transcriptions were coded and then initial themes were identified after an iterative process of critical analysis.

Thematic coding analysis is a heuristic approach for extracting meanings and concepts from data, including discovering, recording patterns or themes, and later reorganising into emergent categories (Javadi & Zarea, 2016). Depending on the nature of the research, different types of codes are chosen. It is noted that the use of prefigured codes risks limiting perspectives and hence opening to emergent codes is of importance (Creswell, 2013, p. 185). Thus, in the context of Ghana, I have made every effort to avoid any pre-conceived understanding. This leads to the choice of 'iterative-inductive' open coding which can invite fresh surprises, insights, and new analytic categories (O'Reilly, 2009, p. 37).

Thematic analysis provides a flexible and useful research tool which can potentially provide a rich detailed, yet complex account of data. It minimally organises and describes data set in rich detail. Grounded theory seems increasingly to be used in a way that is essentially grounded in theory as a set of procedures for coding data very much akin to thematic analysis (Braun & Clarke, 2006)

Limitations of Methods

These include:

(ι) The scope and complexity of study.

The diversity in the scope of this research presents problems of structural management of diverse pieces of information derived from a wide range of fields of specification. The challenge posed by the organisation and co-ordination of theories and methodological procedures, derived from a variety of resources is exemplified in the painstaking attention to details to perceive overt and covert links between levels of sub-systems and phases of the innovation process. The diversity also leads to the necessary involvement of a large number of people to be interviewed and to whom questionnaires were

administered. The scope of the study was physically taxing for the researcher because of the sheer range and volume of activities that were generated.

(ιι) Finance.

The cost of this study is yet to be reckoned but most of it including all the expenditure for the fieldwork which involved three separate visits to Ghana and local transportation while there, has been borne personally by the researcher, a situation that was found exceedingly stressful.

(ιιι) Questionnaire Status.

During the pre-testing and re-testing of the questionnaires in the design state, it was discovered that certain ranges of questions were never well responded to. No specific reasons have been identified for this but it appeared that the cause could not necessarily or entirely be attributed to inappropriately designed instruments but could be very much as a result of apathy or unwillingness or suspicion of the questionnaires on the part of prospective respondents. In the end, the design of the questionnaires had to be much simplified for them to be applied with a necessary reduction in the weighting of the data source. This is a phenomenon that calls for future investigation into the limit of questionnaire use in research studies in the Ghanaian context. But this in no way diminishes the contribution of the questionnaire data as used in this study for comparative purposes.

These, then, have been the strategies for data generation for this research. At all times attention has been concentrated on all the lines of enquiry on the IAC factors and how far they meet with the requirement of the innovation components. This is the crux of the criteria and of analysis of the outcomes of innovation implementation. In the next chapter I shall present the

first set of data on one of the components of the JSS innovation: the vocationalised JSS curriculum.

Summary

The issues and methods outlined above were selected as being most appropriate to the task. Outlined in this paper were four methods used within the qualitative strategy of the study: interview, questionnaire, non-participant observation, and documentary analysis. Of the methods outlined, the headteachers, teachers and education officials' interviews formed the central source of empirical data. Together with evidence derived from the JSS 3 student and teacher questionnaires, they addressed the various issues outlined in the research questions already listed. The other methods of data collection added to the validity of the study by providing triangulatory evidence to the conclusions drawn. The use of multiple methods also mitigated the weakness of any one particular strategy.

The discussion of research methodology in this chapter has been designed to explain the researcher's position on various epistemological and theoretical issues and research approaches adopted. The following chapter will present general issues, such as curriculum and resource implications, job aspirations and curriculum choice of clients.

Chapter 5

Analysis: General Issues

An Overview of Issues

Ranges of major difficulties have been associated in the literature with the analysis of educational innovation. And these include: conceptualisation; curriculum design and resourcing; economic, political and managerial dimensions. A discussion of some of these problems will help to clarify the findings that emerged from the present study.

Conceptualisation

Basically, the problem here lies with the difficulty of planners in identifying needs, and correctly selecting solutions. Often there is failure to evolve a clear rationale for the decision to vocationalise, which in turn leads to doubts about the validity of the objectives specified. Such conceptual confusion has important procedural and resource implications in the later stages of the programme. For example, the significant difference between a pre-vocational and full vocational training is insufficiently grasped. This makes the necessary pedagogic and management orientation difficult to achieve.

And in many cases, the programme is embarked upon without clarity in definition, which is one reason why the vocational content often tends to lose out to the academic. Instances of this have been exposed elsewhere in Africa, for example in Kenya, Afenyadu, King et al. (2001); Nishimura & Orodho (1999); Lauglo & Narman (1987), Tanzania, Dodd (1969); Psacharopoulos & Loxley (1984); Dar (2000); Botswana, King & McGrath (2002); Zambia, Fluitman & Alberts (2000); Nigeria, Nwakoby & Lewin (1991), as well as in Ghana (Commission Report, 1974; African Union, 2007).

The Curriculum and Resource Implications

The Director of planning and development Division MOE clearly states the difference between pre-vocational and vocational:

> *"another aspect of this course that I would like to bring out is the definite distinction which is being made between pre-vocational and vocational training. In vocational training you teach your students a certain trade and with the knowledge and skill thus acquired he or she is job ready. In pre-vocational training, on the other hand, the student is expected to build up a general educational platform which he or she would be able to select a future educational career, be it vocational, academic or both.*
> *This conceptual difference between vocational and pre-vocational training is crucial because it implies different methods of teaching, different organisation of work, different layout of the workshops, different kits and equipment."*

However, differences between pre-vocational and full vocational rationales demand entirely different approaches in curriculum design, resources and method of implementation. This difficulty had been highlighted in Blaug's (1973) and Foster's (1965) criticism of attempts to teach vocational courses in schools, because they are ill-equipped to handle the actual skills required by the job sector public or private, Lillis & Hogan (1983) agreed with this criticism, but suggested that a possible solution might lie in the design of a flexible process-based curriculum that is equally suitable for teaching cognitive as well as transferable practical skills. Though such a curriculum, they suggested, would be able to equip students with skills that are transferable to a range of job situations. And it would also be able to cope with changes in occupational structure over time.

Economic Aspects: Job Aspiration and Curriculum Choice of Clients

In fact studies by Foster (1965); Akyeampong, 2014; King & Martin (2000) in Ghana, Lauglo & Narman (1987); Kerre & Oketch (1999); in Kenya, Adam (1999); Dar (2000) in Tanzania; Lewin & Nwakoby (1991) in Nigeria; King et al. (2001) in Ghana, Kenya and South Africa; Fluitman & Alberts (2000) in Zambia and Mead (1999) in Zambia and Kenya and Oketch (2007) in SSA all highlight the close interrelationship between the demands of the

economy (experienced through the job market), and the viability of vocationalisation. In effect, the problem for which vocationalisation is offered as solution, may lie well beyond the boundaries of formal education.

It is worthy to note that both parents and students see education as an avenue for social and economic mobility and invest in the kind of education that is judged appropriate for this purpose. In Ghana, as elsewhere, academic education is perceived to hold this key to success and any other form is unacceptable as being lower in status. Consequently, vocational education stands a very poor chance against the academic. Even where access to academic education is very limited, students would go through vocational courses as a preparation for more effective competition into the grammar schools. The modern secondary schools in Ghana in the 1950's and 60's for example, ended up, as was reported, offering a purely academic course which provides only a 'polishing' of the education received at the primary school. Bacchus (1980) reported a similar practice in Guyana amongst students of non-elite schools where vocational subjects were supposed to be taught: students only go through the course so as to prepare better for later access to what is seen as a more valid form of education.

In any case this represents the realities of the aspirations of school leavers and their parents in terms of occupations and in relation to the curricular offerings of schools. Whereas the goals of vocational education generally may emphasise orientation to jobs in the rural locality, school leavers and their parents, aim at access into the modern sector that offers higher incomes. This economic perception of the students has been argued by Foster (1965) in relation to Ghana. Refuting the white-collar job syndrome, he asserted that:

> *"The school leaver turns out, however, to be more perceptive of economic opportunity. Naturally the school leaver will make his strongest bid for the class of jobs with the most appealing net advantages of which money income and its regularity, are the principal ingredients… The truth is that school leavers'*

> *attitudes towards employment are determined almost exclusively by what is happening outside the schools in the society and economy"*
>
> (Foster, 1965: 151)

Clearly both aspirations and real economic activity, influence what the students wish to learn. Citing another example from Ghana of the gaps that exist between what is learned and the realities of the economic world, Lewis (1965) in his assessment of some agricultural training projects in Ghana had said that:

> *"The projects failed largely because there was no significant economic future for the young men on completion of their training, but at a deeper level they failed because they were designed without paying attention to the inter-relationship between the training of people for their employment and the market for their skills and products… The success and failures of projects for vocational education in Ghana were directly related to the social and economic circumstances of the time."*
>
> (Lewis, 1965: 60-61)

Citing another example, Anderson (1970) described a similar experience in Kenya with the establishment of the 'Jeanes Schools' where the clients became disenchanted because they found the course to be offering 'second class' education which only led back to hard manual labour instead of offering access to the wealth and technical advantages of Western life they saw displayed by Europeans.

It is now generally accepted that access to better jobs, higher wages, higher social status and living standards lies in higher qualifications, preferably at tertiary level. Attempts at vocationalisation are thus continuously being reconstructed by the clients to serve perceived individual economic aspirations.

The Political Dimension

Therefore, such inherent duality, which places vocational education at a disadvantage, may require much more than a curriculum change to correct serious imbalance in the system. Often governments justify vocationalisation in labour supply terms. As has been demonstrated above, this strategy is torn by a dichotomy between government goals and the aspirations of

individuals. It would therefore be difficult to re-orientate perceptions towards vocational education unless political action is taken to restructure the economy in such a way as to overcome existing discrepancies. Such action would have to take note of socio-economic change within the country. However, the dependency relationship between the economies of developing countries and those of the developed countries would also require drastic re-alignment for any measurable progress to be made for change (Kingdon et al, 2014).

Definitely, the problem, then is whether the government of Ghana has been able to take the necessary political decisions to match its objectives with the realities of pressing educational demands as perceived differently by the population. How possible is it for governments to evolve an economic strategy that can be used to re-direct educational demands so that rational planning priorities agree with the goals of clients?

Innovation Management

Basically, one problem area, highlighted by Lillis and Hogan (1980), is the management of vocationalisation as an educational innovation. This may be attributed at least in part to the fact that there have been very few studies of educational innovation processes in the developing countries. It is not surprising that most of the examples of vocationalisation that have been quoted failed to include such vital factors as the implementation strategies and organisational variables they have to contend with. A closer look from the innovation management perspective may help to expose more clearly the dynamics of the processes of vocationalisation.

This approach would benefit greatly from Havelock & Huberman's (1977) insights into the management of educational innovations in developing countries and also from the study of problems of science curriculum innovations in Malaysia and Sri Lanka by Lewin (1981). Some of Lewin's conclusions, though drawn from an evaluation of a science programme, are

applicable to vocationalisation as an educational innovation. Of particular interest are such issues as:

- the scope of the innovation in relation to the demands it makes on the capacity of the implementers;
- the degree of systemisation of procedures for effective and consistent implementation;
- the efficiency of communication between planners and implementers;
- the use of evaluation and monitoring for innovation modification and improvement;
- the localisation of curriculum materials;
- the co-ordination and linkage of activities of all participants in the innovation as well as a sensitivity to the contextual constraints of the system;
- support services provided for the innovation.

All these make a useful checklist for the present study. Consequently, the remainder of this chapter will examine data on the capability level present within the Ghanaian system for implementing the JSS reform. Evidence will be drawn from each sub-system context in which the innovation operated, as already described in the last chapter, monitoring each phase of the problem-solving cycle from conceptualisation, implementation to evaluation. The next sub-section will therefore deal with conceptualisation at national, regional, district and school sub-systems levels.

Conceptual Issues and the JSS Reform

The evidence presented below shows how far the ideas and assumptions of the National Policy on Education (NPE) appear to have been clearly understood and correctly interpreted, as is reflected in the planning of the curriculum in such conceptual activities as problem identification, solution identification and specification, and the setting of objectives. This study argues that differences in the way the most important characteristics of the

innovation were perceived, and discrepancies in priority specification during conceptualisation, invariably led to extreme difficulties in implementation.

The logical characteristics of these new policy goals describe a curriculum that is broad in scope and integrative in approach. Such a curriculum, on the basis of its specification, requires that the designers, implementers and users acquire abilities that are high in comprehension, analysis, synthesis and application. Of great importance is the capacity to see the relationship between the school and society. Actors at each sub-system of responsibility are expected to be able to create a new perception and balance between learning requiring only mental skills and that requiring manual skills. Actors should also be able to link school activities meaningfully to life outside school in order to emphasise the interface between them. In analysing the evidence arising from this research we may be able to discover how far these behaviour requirements have been specified in the curriculum so that the intentions are easily understood.

The main issue that emerged from this part of the analysis was the lack of coherence in *conceptualising* the new JSS reform. All data sources, visited or generated, threw up evidence of different interpretations of the purpose and objectives of the JSS reform. Even as late as 1989 actors at all system levels were still grappling with the task of concept definition and specifications. A major conflict was posed by the contradictions implicit in the assumptions of the policy statements: that the JSS should be terminal for the majority of students, and therefore, simultaneously that the curriculum should:

- cater adequately for this group to prepare them for life outside school
- provide a general education with basic pre-vocational orientation.

The issue of clarity and logic in solution definition, specification and choice became problematical with the JSS reform, as a gap was created between the need to provide full vocational as well as pre-vocational training within general education. The evidence

demonstrates the difficulties in bridging the gap between logically conceptualising real needs against what is actually feasible. The findings, therefore, replicated similar outcomes from other studies already mentioned such as Foster (1965); Lillis & Hogan (1983); Lewin (1981); King & Martin (2000); Lauglo & Narman (1987); Lewin & Nwakoby (1991); Oketch (2007); Akyeampong (2014).

The following extract from one of the researcher's interviews illustrates this point:

> *It is amazing that the thing has been running for over ten years and it is only in its tenth year that I am beginning to understand it. Now the emphasis is to orientate the child to be able to use his hands to help himself, be able to understand the machines that surround him in his world. We had wrongly thought initially that the emphasis was on acquisition of employable skills*.
> (Director of Education (Secondary) MOE, interview, January 2000)

This quotation dates from an interview with the researcher early in the tenth year of the implementation of the JSS reform. The Director of Education clearly presents the doubts and difficulties that were being experienced in getting the concepts of JSS understood at the highest echelon of the implementation subsystem some five years after the programme was supposed to have commenced. Further evidence presented below shows the varying degrees to which the ideas and assumptions of the National Policy on Education (NPE) appear to have been clearly understood and correctly interpreted at different levels. The analysis is undertaken at the national, regional, district, and school level, and each will be discussed in turn. The following finding can also be found in Osei (2003: 149)

Conceptualisation at the National System level

The NPE made the following provision in its section on the JSS:

> *The Junior Secondary School will be both pre-vocational and academic; it will ... teach all the basic subjects that will enable pupils to acquire further knowledge and develop skills ...* (GOG, 1986: 9)

Apparently, this specification seems clear enough in establishing the nature and purpose of the JSS reform. However, the Joint Consultative Council (JCC) Reference Committee on Junior Secondary Education had long held a different view and stated the aims of the JSS reform in a report in 1985 as follows:

> *The aim is to make him/her achieve some level of competence in the chosen vocation that will make him immediately employable at the end of the years of JSS education*. (Committee Report on Junior Secondary Education, 1985: 21)

This position seems in direct contradiction to the 1986 NPE position. It may be that the definition of objectives was still evolving in 1985. The view in the *'Blueprint for Implementation'* suggests this when it insists that:

> *Students at JSS level cannot be expected to acquire skills with which they can immediately find a job. Instead, they would at this level build up a wide base of vocational understanding and knowledge from which they can later on select a more specialised direction.* (GOG, 1985: 51)

The seeds of some confusion seem to have been sown early on in the development of the policy. In June 1988, a national workshop on 'Introductory Technology' was organised by the Implementation Committee. The Honourable Secretary of Education, and the Director of Planning in the Ministry of Education each addressed the workshop and each restated the aims and objectives of the JSS reform. Their interpretations confirmed the specifications as outlined in the NPE and the *Blueprint*. Nothing could be clearer than the statements of these officials in the highest decision-making level at the MOE, that the curriculum would be *pre-vocational* in character.

Yet the PNDC Chairman's Assistant was reported in November 1987, two months after the JSS commenced, to have told a meeting of secondary school headmasters from all regions of Ghana in Kumasi, that 'the new system would reduce unemployment problems among secondary school leavers'. Again, in January 1989, the then PNDC Secretary for

Education and Culture was reported to have told journalists in Accra that: 'the essence of the new system was to prepare students who might not be able to go beyond the JSS level to be able to take gainful employment or proceed to technical schools' (*Ghanaian Times*, 15 January 1989 p. 3).

From evidence so far presented, it would seem that those who had interacted closely with planning and policy formulation at the MOE Headquarters had reached a consensus about the pre-vocational, non-employment orientation of the JSS reform, while the political appointees, who were not at all involved in the policy formulation, had tended to focus on the vocational, that is to say the employable skills of school leavers.

What emerges from this analysis is the confusion in specifications and interpretations at the national level, a tendency not uncharacteristic of similar attempts at vocationalisation elsewhere, as the literature cited above has shown.

Conceptualisation at the Regional Subsystem Level

Evidence of the earliest attempts to conceptualise the JSS reform at regional level is contained in the *Report of the Committee of Implementation of the NPE in Ashanti Region with Respect to Technical Education in the JSS System.* The Committee adopted the recommendation of the Blueprint on 'Technology in Junior Secondary Schools' (GOG, 1986) that a syllabus for an integrated subject, 'introductory technology', should be devised and taught as part of the JSS curriculum. The orientation in the Committee's recommendation is pre-vocational. The report acknowledged the influence of officials who had been very closely involved at national level with the drawing up of the JSS new curriculum. It is not a surprise, therefore, that the specifications of this Committee are as clear as those of officials of the MOE.

During the fieldwork the researcher sought, through interviews, to identify the different actors at various levels of the education system in Eastern Region and discover what they saw as the purpose of the JSS reform. The Regional Director of Education (RDE), who also coordinated the work of all other divisions for the MOE, told him that the idea of the JSS system is 'not for training in a particular vocation but to get ideas about skills needed'. The Deputy Registrar of West African Examinations Council (WAEC) supported this view.

On the other hand, the Regional Minister in Koforidua confidently claimed that:

> *the three years will equip them to make a living after leaving school. The graduates of JSS can't be called dropouts because they have been prepared for being useful even after three years*. (Regional Minister Eastern Region, interview)

A basic conceptual problem seemed to be emerging. Despite the clarity in the definitions given at national, regional and district MOE levels, there was evidence from the interviews undertaken for this study that staff not closely involved with the planning of the new vocationalisation policy developed differing views of its key features.

Three years after 'take off' the Regional Education Committee was still not certain what was expected of the schools. Six months before the end of the first cycle of the JSS system in 1990, the PNDC Secretary for Education and Culture found it necessary to explain to headteachers of junior secondary schools what the JSS reform was supposed to be achieving, stressing its pre-vocational nature.

The most dramatic demonstration to the researcher of the difficulty in conceptualisation comes from a science JSS teacher at Star of Suhum JSS. He explained that the purpose of the new system is to give those who can't carry on academically the chance to go out and find another track; perhaps to get a job and not waste time and money trying Class 9. He then turned to exclaim to the researcher:

> *Will they be given a choice? That is, is the child to choose whether to remain or pass out, or is it the teacher who selects those to stay or*

> *leave? Some children will resist this. What is the prospect of getting jobs for them? What of equipment? Are they providing the equipment necessary for preparing them for jobs on leaving school? But will it work here when those well-qualified have not got jobs?*
> (JSS science teacher Suhum, interview)

As the interview proceeded, this teacher became aware of a whole range of implications arising from his conception of the JSS system. He had raised the kinds of questions and consequences, which needed to be carefully considered before specifications could be regarded clear, as well reasoned and, therefore, acceptable. Indeed, the RDE rightly assessed this conceptual problem in an interview:

> *The JSS curriculum of introductory technology clearly sets out the required outcomes and tools needed. But the idea of local crafts as part of the whole package has not been well stated in the document, e.g., the use of local craftsmen and knowing whether they exist i.e., local crafts are dying out: basket making is being replaced by plastics ... Returns from basket making are not sufficiently attractive to be an incentive for people to pursue them for remuneration ... Learning has to take into consideration the relevance of what is being taught to actual needs ... There wasn't any real study of local needs. Only national conferences that decided on national needs for technical and vocational education ... The JSS curriculum was drawn up before people started thinking of the problems they would be facing ... It is at this stage of the implementation that problems are being thought of.*
> (RDE, GES, Koforidua, January, 2000)

Therefore, it would seem that there had been a failure to develop interconnections between what was proposed as a JSS reform, and the needs expressed through the aspirations of parents and pupils. Thus, while the Regional Director could clearly see a relationship between the JSS curriculum and what he thought offered viable job options and so an incentive for study, the JS school teacher could clearly perceive a discordant relationship between the new JS school system and the aspirations and options available to students. 'They will resist it' he had pointed out.

These two actors at different levels of responsibility in the system had been able to perceive implications of which the planners did not seem to have been fully aware in their JSS reform specifications. These data bear a direct relationship to the problems of JSS curriculum

design and how to match it against the aspirations of consumers. They also reflect the realities of the socio-economic world, as they exist in Ghana.

The Management of Implementation of the JSS Reform

This analysis continues with the collation of evidence on the planning and management of the implementation phase of the JSS reform. In the problem-solving cycle, the implementation phase incorporates three main activities which have been identified here: communication, adoption and operationalisation as demonstrated at the national, regional, district and school sub-system levels.

> *Professor Evans Anfom Chairman of the Implementation Committee on the NPE has listed three problems hampering work on the 6-3-3-4 system nationwide. They are:*
> *-shortage of finance to procure necessary laboratory and workshop equipment;*
> *-inadequate technical teachers;*
> *-and poor enlightenment of the public on the advantages and processes of implementing the policy.*
> *According to Professor Anfom who has already visited five regions, even literates and highly placed citizens "misinterpret and misrepresent contents of the policy. Such misrepresentation" he pointed out 'often raised unnecessary fears among less enlightened parents who obviously care about the educational future of their children…' He attributed poor enlightenment to the scarcity of the policy document."*

(The Ghanaian Times, November 29, 1990).

Communication at National Level

The following quotes are excerpts from a group interview with the Directors of the Ministry of Education, Accra showing their reactions to the researcher's request for any information or materials they might have on the JSS reform. The interviewees included the Director of Education (Secondary) and three Assistant Directors.

> *'Do we have anything from the Ministry of Education (MOE) on the JSS reform?'*

'No nothing special.'
'No literature.'
'We stumble on facts by reading what people say in general.'
'I have not heard of JSS till now, only 6-3-3-4 system.'
'The Directorate Office here is not put in the picture.'
(Directors of the GES, MOE, Accra January 2000)

Attempts were made by the researcher to probe these surprising statements by insisting that their responsibilities as directors must surely include managing the implementation of the reform in their area of operation. Their specific assignment, they assured the writer, involved 'monitoring the quality of education, i.e., to see that every school'' maintains minimum standards'. Questioning went on further to establish in what ways, if any, they had been involved in the educational reform. They claimed that they were in no way involved, not even in conferences, seminars or anything concerning the reform. When asked how delegates to conferences were selected, they said it was handled by Central Administration at the Headquarters in Accra. When asked: 'how much interaction is there between the Regional Office and two Teacher Training Colleges in Somanya and Akropong-Akwapim'? It was surprising to hear that there was none whatsoever, an assertion later confirmed by the Principal of Presbyterian Training College in Akropong-Akwapim.

Thus, there is strong evidence that there was hardly any communication between the various departments of the GES/MOE organisation. It appeared that the organisational structure of the GES/MOE had even helped to aggravate the situation. Communication flowed along the vertical columns from top downwards. There were no horizontal information flow and therefore no interdepartmental communication. Thus there was a communication gap between the Regional Education Office, GES and the MOE, Accra.

The mode of operation of the Implementation Committee further helped to create a gap in communication. It was a body set up especially, to manage the implementation of the National Policy on Education (NPE). It would seem from the calendar of programme

implementation that its concern was only for teachers, schools and resources (GOG, 1986). Communication was excluded entirely from the plan, which made no provision for general enlightenment about the reform. The following finding can also be found in Osei (2003: 156).

The communication gap at the national system level extended to its dealings with the regions and districts, thus demonstrating not only an intra-system inadequacy in information flow but also an inter-system gap. In 1989, the Implementation Committee had organised a workshop for teachers of introductory technology using the model workshop in Kumasi. The PNDC Secretary for Education and Culture and the Secretary of the Implementation Committee had been involved in the workshop. It was only from press reports of the workshop that the Regional Directors in the Eastern Region, Koforidua, got to know about it. A protest letter was despatched from Eastern Regional Education Office, Koforidua to the Headquarters, Accra against what was regarded as a grave insult.

At the national level, available evidence of awareness creation showed a high degree of tendency to intra/inter-system fragmentation through a lack of an articulated policy to facilitate information flow to ensure effective participation at all levels.

Communication at Regional Level

The Regional Director, summarising communications within the MOE, perceived the crux of the problem to be system breakdown due to fragmentation and compartmentalisation, that is, what he called a lack of 'systematic plan', no system and no integrated action to facilitate information flow. While he deplored the effect of decentralisation on communication and internal cohesion within the MOE, conversely, the four Directors interviewed all regretted the difficulty they encountered in getting headquarters in Accra to give heed to their opinions when making decisions about various implementation activities.

There was a feeling among the Regional Directors that power was being concentrated in the office of the coordinating director in Accra in a manner that impinged on what they perceived as their logical functional boundaries. The most common complaint of the Regional Directors was that instructions were issued from Accra demanding that they carry out programmes that were not feasible because those at Accra had not bothered to study information available from the regions in order to reach more realistic decisions about implementing the reform. For example, if reports from the regions had been taken into account regarding the situations in the JS schools, headquarters would not have insisted on imposing the JSS examination in June 1990. Efforts to send up information from the bases in the regions were thwarted and sidestepped, thus subverting the information flow.

Surprisingly the Regional Director himself provided evidence to support this claim. He was found seated by the researcher, encircled by the mound of files around his table, with his head just visible above them - and he is among the tallest men in the Ministry. He had even had to provide extra tables to create more space for his files. Noticing the amazed look on the researcher's face as he contemplated the daunting pile of files this particular morning, he tried to explain in exasperation that nobody else ever wanted to work any more in the Ministry. Everything was pushed to him. These files had been dumped while he had been away to a meeting at the headquarters in Accra. As he spoke, one of the drivers came in with an application from an assistant director seeking the Regional Director's approval for transport. This was surprising because the organisational structure in the Ministry did provide for a transport unit under the administration division.

And it would seem that the role and responsibilities of a Regional Director in the Ministry had not been sufficiently differentiated to enable assistant directors to understand more clearly what was expected of them. Even the Regional Director himself did not seem

quite so certain about what his responsibilities were from his complaint against the assistant directors and from the way he angrily sent the driver away.

However, one consequence of this inadequacy in infrastructural configuration is that bottlenecks develop in the communication flow. Assistant Directors have to wait for unduly long periods before decisions are communicated to them. Meanwhile vital information cannot be circulated to the grassroots as the files may be at the bottom of the pile, or the RDE may have to be away for another meeting. At a time when the RDE was ill, an assistant director wondered how the MOE could cope without him 'for he is the only officer in the Ministry with up-to-date information about what is happening there. He knows everything about every section of the Ministry' – such dependency on a few key individuals is a significant finding of this research in the analysis of communication flow.

Emergent Issues from the Communication Data

Four major problems are thrown up by the data on communication strategies and they are:

Late start and poor maintenance

However, it was revealed that activities to generate awareness for the JSS reform did not actually commence until implementation was well on its way. The earliest effort from the national level to inform teachers, by means of a national orientation workshop, was made in exactly the month of September 1987, when the reform was supposed to come into effect. Nothing else was done until a year later, when a one-day regional-run workshop was held for senior and middle management, and this was in just one subject area: introductory technology. In 1989 a similar workshop for teachers was held. Such efforts had been sporadic and un-sustained. As a result, it was difficult to expect those involved remembering the information that they had been given. The long distances and significant costs discouraged regions from

participating fully in nationally organised activities. The districts, for their part, made very few efforts to provide any in-service training.

Poor Integration

This factor has two aspects: a low inter-system information flow among actors in different subsystems, and a low inter-system information flow between subject disciplines.

The writer's research strengthens the view that whatever communication was initiated from official quarters flowed within bureaucratic functional boundaries. The organisational structure was of the 'Greek temple' variety, encouraging information flows from the top down. Thus at the national level, the National Inspectorate Division was isolated from the activities of the Implementation Committee and other Divisions. The University College of Education at Winneba remained an island by itself refusing to interact with the National Inspectorate as well as with District JS schools. At the national level Directors also experienced difficulty within the MOE organisation of directing information from the base upwards. Involvement of the JS schools and the teacher training institutions was minimal, as shown from very low levels of participation at conferences or workshops.

The second problem of inter-system integration was that most efforts initiated by the MOE gave pride of place to introductory technology, almost to the total exclusion of other subject disciplines. No attempt was made to place introductory technology in relation to other subjects. Officials, and subsequently teachers, failed to demonstrate the relevance of an integrated approach to learning. The result was that school learning was organised without the benefit of experiences that could have been drawn from other subject areas in order to enrich the learning process.

Inadequate Exploitation of the Media

Key people when interviewed, pointed out this deficiency. The planners and implementers should have used the media for effective communication but had failed to do so. From parents particularly, the researcher heard that little effort was made to communicate officially with the public. Information that did get out was at the initiative of the various news media particularly the radio and television. Even parents in the rural areas had heard the news on the radio. This shows the immense potential of the media, which needs to be tapped and incorporated as part of an official strategy to generate awareness about educational issues and decisions.

Parent Teacher Associations, Unions and the Community

In spite of the impression created by the MOE that these bodies were dispensable and could be taken for granted, evidence in this study has demonstrated the contrary. These bodies were very much involved in implementation activities, yet they were amongst the least informed about the reform. Similarly, employers were not approached with information, although they were bound to be affected by the changes in JSS reform. In summary, what is apparent from the evidence gathered and analysed is a lack of understanding of the vital elements of interdependence and integration implicit in the JSS reform by the planners and managers at both MOE/GES and GES sub-system levels. Consequently, the mode of communication adopted for circulating information about it has retained the closed bureaucratic procedures that are suitable for stable, routinised systems.

Curriculum Implementation Data: Adoption Activities

The essence of the adoption phase in the implementation process was described in Chapter 4 as involving the two important activities of commitment to innovate and marshalling of procedures and resources. For this innovation element a high capacity for

planning and judicious selection of resources is presumed bearing in mind relevance, applicability and cost-effectiveness (Kingdon et al, 2014). Ability to review critically, adapt or improvise is vital at this phase. I shall now examine how effectively commitment, planning of procedures and resources have been carried out with regard to funding, accommodation, materials, equipment and teachers.

Because of the variety of activities in this phase I find it easier to restructure the format for data presentation somewhat. Instead of building up evidence at different system levels I shall pull together such evidence from all systems as is relevant to each adoption activity. The effectiveness of each procedural elaboration activity both at national and regional levels will be seen in relation to other activities in the adoption phase. Let us examine activities in budgeting and financing and compare actual procedures with implementation plans.

Funding

The evidence quoted in the following from the various newspapers indicates the level of difficulty in reconciling the budgeting that had been carried out for implementing the vocationalised curriculum by various sub-systems and individual actors. Already we have seen the variations in amount quoted. As was elaborated in the introduction to the 'Adoption' phase, the nature of this innovation requires an I+ system completion level which includes the ability, structures and procedures for establishing costing figures in addition to other aspects of planning. The evidence in this regard exhibits a wide gap between the level of competence and efficiency required to cost this innovation and what has actually been practised. The national planners do not seem to possess the relevant level of infrastructural capability required for financial planning for the curriculum innovation.

The Blueprint based its estimate of capital cost for the JSS from 1987 to 1990 at 500 *cedis* per pupil place.

(i) The New National Policy on Education

"…*Why would the so-called workshops and laboratories cost so much (Cedis 200 million)? Are they going to be built from scratch? Are there no secondary schools already existing with sufficient classroom some of which can be converted into workshops and laboratories? Must they be expensively furnished and equipped before they become functional?"*

(Dr E. Asante, a university lecturer, Daily Graphic, 10th January 1988, Accra).

(ii) National Policy on Education – NG Blamed for Impeding Smooth Take-off

Dr Ekaw Spio Garbrah was said to have told a meeting of experts and MOE officials in the country in Accra "if we want to take off, we must lower our sights and go for basics." He said that he had attended similar meetings where regional governments put up fantastic claims and cited instance where a regional government with a population of less than 3 million wanted C 15 m. while another region, trying to be modest and having a population of 5 million said, "just give us C 8 million."

"The whole show, "he said, "it looked like an auction sale, bringing the total to quarter a billion Cedis."

(Ghanaian Times, 25th September 1987)

(iii) New System may not Take off in the Central Region

"… *this is because Colonel Baidoo has stated that enough provisions had not been made for it to take off. He explained that the Region needed 100 vocational teachers and, 20 m. Cedis yearly to embark on the system.*

Colonel Baidoo … said the new educational system was laudable but maintained that it was the responsibility of the National government to fund it."

(Daily Graphic Headlines September 19th, 1987)

Issues of Accommodation

Having completed its estimates for infrastructures of the JSS reform the Implementation Committee left it to the Regions to work out the details of accommodation issues for implementation at their own level. Building plans were also provided.

In February 1987, a circular letter was dispatched to all junior secondary schools from the Technical Division of the MOE instructing them to have workshops built in readiness for the Introductory Technology subjects commencing in September of that year. The headteachers were advised to seek the cooperation of the communities and PTAs. This letter subsumed a number of issues ranging from timing to the mode of financing and communication. For many of the headteachers (recalling findings from evidence about the

degree of awareness and efficiency of communication outlined in the last section), this circular might possibly have been the first official information they had seen about the innovation that was to be introduced. Furthermore, they had only a period of seven months to comply with the directives. The onus was placed on the headteachers to communicate with their communities and PTAs. As the Blueprint had pointed out, the funding of education is a concurrent responsibility of the national, regional and local Governments as well as the individual communities and PTAs. There are, however, no specifications about how the burden is to be shared. The indignation of the JS schools is captured in reactions to the circular; these range from deliberate misrepresentation and open hostility, to defiance or even threats either directly from the PTA executive or from the headteachers.

However, one of the letters opened up an option, which the MOE planners ought to have thought of – adaptation of existing and available facilities in the schools. This is an idea that could have been thrown up in a dialogue with all involved. A good number of the JS schools could have identified unused or underused accommodation they already had. The researcher was able to confirm this during case studies in some JS schools where he discovered schools with surplus buildings, part of which they had converted to create workshops. This was true, for example, of Star of Suhum JSS, L/A JSS Suhum, L/A JSS Okroase and Sisala JSS. The headteacher of this last school had written, giving details of the underused facilities they had and seeking approval for them to be converted for use as workshops. A prior review of available space for facilities by the MOE would have saved much rancour. An important necessary stage in resource planning had been missed out, resulting in low-level cohesion in this implementation phase.

Another important emergent fact is the enormous financial involvement of the communities and the PTAs in funding the schools. For example, in addition to providing

school buildings, the PTA committees build staff houses and carry out repairs and maintenance work. Parents would further have to provide for things such as school desks, chairs, uniforms, textbooks, tuition and boarding fees for their children. To make matters worse, this was the period when the directive compelled headteachers to pay into the sub-treasury all monies, school fees, equipment fees and other official levies, collected. Headteachers, therefore, had only levies collected from PTAs on which to run their schools.

With the evidence presented, we can only draw the conclusion that the procedure for providing accommodation for the JSS reform has displayed similar inadequacies to that which characterised other aspects of the initiative.

Equipment Provision

A national planning workshop in 1986 had ended with 20 recommendations on planning for the JSS which had included items on resources thus:

- large multi-purpose workshop to serve a cluster of schools, "and in any case there should be a workshop for every stream in a JSS",
- the National Government is requested to mass-produce and/or import school workshop equipment to enable regions to obtain it cheaply;
- the National Government should assist regions by supplying some of the equipment and kits required in the JSS according to a formula to be decided by the National Government;
- in appropriate cases mobile workshops should be employed and centrally placed, workshops could be shared by several JSS (GOG, 1986; GOG, 2004).

By 1986-87 the Government had made a commitment to supplying equipment by sending allocation to 10 schools in each region and entering into negotiation for bulk purchase on behalf of regions to the tune of 50 million *cedis* due for delivery by June 1988. Two issues

were proving difficult to resolve and these are: the multi-purpose workshop and hand tools versus mechanised tools. In arguing for a multi-purpose workshop, the approach seemed to have been more on logistical expediency than on adequate conceptualisation of the actual requirements of the JSS reform.

The planners had acknowledged that it would be impossible to provide adequate accommodation for all the nine identified pre-vocational subjects and the question was then posed, "which subjects should ideally be combined in one workshop?" The answer it was suggested, could be found in an "approach to the problem which is based on which kind of equipment of a similar kind is required for different subjects."

The researcher considers such an approach simplistic given the complexity of the innovation. It is rather argued that serious consideration for basic curriculum design concept should provide the focus for resource planning. Thus it becomes possible to take the search for equipment beyond mere identification of superficial similarities between subject areas to the examination of the purpose, objectives and methodology logically implicit in the UJSS curriculum. The Implementation Committee's efforts at equipment planning are acknowledged as having advanced the problem-solving process. But failure to give sufficient attention to JSS curriculum issues in the equipment planning procedure is seen as a gap that may have implications for further implementing the plan. This is clearly so, for example, in a subject such as Introductory Technology which most exemplifies the integrated curriculum design concept.

We need to recall here the clarification given by the Director of Planning, MOE, during the first national workshop for pre-vocational teachers in Kumasi in 1988 about the implications of the difference in conceptualisation between vocational training and pre-vocational training. One major implication, he pointed out, is the difference in equipment

requirements. Similar differences might be identified between planning approaches which consider subject areas individually and those which look at the curriculum as an integrated whole – a concept which is a basic characteristic of the innovation. It would seem that the rationale for equipment and workshop provision here has not been logically derived from the JSS requirements as planned.

Another gap observed by the researcher that had been raised at the workshop concerned the level of sophistication to be allowed in the equipment planned for. The hand-tools – versus- mechanised-tools debate was never really resolved as is apparent from the scathing criticisms of such protagonists as Dr. Ekaw Spio Garbrah against the so-called 'billion *cedi* planners and implementers', who are obviously advocates of sophisticated, costly mechanised tools. The Chairman of the Implementation Committee, seemed to admit a tactical error in planning when he went to great pains to explain that at least 13 pre-vocational subjects could have been taught without expensive equipment. Another issue observed by the researcher at both national and regional-planning levels was the lack of effort to derive equipment from the system environment. Planning seems to have been based on the assumption that equipment would be obtained from outside the system and so neither Committee (at national or regional levels) by the time it submitted its report, had discussed possible local alternatives in equipment provision. It is suggested here that there is a need for a fuller and more efficient utilisation of resources already available internally among all sub-system levels. This is possible only where the system has evolved to a level of development that enables all system members to appreciate and exploit their interrelatedness and interdependence such that every system environment is thoroughly explored for its capabilities and possible contribution to system growth. This relates back to problem of information flow discussed above.

The evidence available from this research shows that the necessary level of system completion has yet to be achieved. Consequently, resource planning and procurement has tended to be fragmented with planners failing to seek out internally underused resources already existing in each sub-system.

Teacher Provision

Teacher Supply

The Implementation Committee recognised the challenge of the task of producing the required number and calibre of teachers for the JSS reform, and especially for the prevocational subjects. It therefore worked out a line of action aimed at solving the problem. This consisted of strengthening the capacity of all training institutions already running the National Certificate of Education (NCE) and degree courses in technical subjects, and also involving new centres, such as Colleges of Technology, in establishing training courses for technical teachers. The Committee went on to recommend the use of local craftsmen and artisans as assistants to teach vocational subjects. The Blueprint also contains the Committee's recommendation for an increase not only in teacher population, but also in the number of subjects that any individual teacher can teach. This idea was elaborated in one of the papers given at the 1988 National Workshop for Pre-vocational Teachers in Kumasi, presenting the concept of the multi-purpose teacher as a strategy for maximising teacher effectiveness by increasing the range of skills and competencies acquired by the teachers.

The Government and the MOE have, in different ways, tried to implement some of these recommendations. There has, for example, been an acceleration of teacher training programmes at different levels, including overseas training, for technical teachers. To serve teachers a number of in-service training courses including workshops and seminars have, at different times, been arranged at the national level, as already discussed above. Some doubt is

felt, however, about the accuracy of the Committee's projections for teacher requirements for the JSS. This is particularly so as the Committee had itself acknowledged possible inaccuracies in the statistical data available to them (Committee Report on JS Education, 1985)

Furthermore, the drive for overseas recruitment for technical subjects especially was irrelevant in some districts, like Suhum, where local resources were found to be adequate. We thus find, once more, that the planners consistently exhibit low capability in data collection and estimating of needs. They have been unable to muster the capability necessary for accurate planning. It might be argued that in accordance with role specifications and job differentiations, errors in statistics submitted by the districts could not be the responsibility of Ministry of Education officials. But it logically lies within their responsibility to generate capability for supervising data collection at district levels and maintaining such linkages as are necessary for efficient coordination, since this is a problem they, in fact, have already identified (Committee Report on JS Education, 1985). Indeed, the planners could be said not to have developed adequate problem-solving approaches to the acknowledged weaknesses in data collection – the basic resource for planning – resulting in a very low level of system development in the area of estimates and projections.

Teacher Quality

By the way another area of inadequacy is in *teacher quality*. Although teacher production has increased in absolute terms, as has been demonstrated in some districts, there has not been any comparable change in teacher quality as is required by the innovation, thus leaving a gap between what is needed and what is actually available. Firstly, although evidence has shown efforts by the MOE to run in-service courses and seminars and workshops for serving teachers, these have been too few and too far apart to sustain any significant

impact. Thus while the officials have reached a high ability in recognising the need for and identifying the principle of the solution, they demonstrate only a low ability level in carrying through the in-service training. Secondly, there is no evidence to support the intention that training programmes for teachers should be changed sufficiently in content and methodology in order to produce the kind of teachers with relevant characteristics as demanded by the JSS reform. J. Anamuah-Mensah (1999) of the University College of Education, Winneba, summarised the situation thus:

> *''In institutions where attempts to enhance the attainment of the policies ideals have been made, it is evident that we have not given the depth of knowledge required to perform effectively. The integrated science teacher is a case in point. Where integrated science has been a part of the teacher preparation, we have hardly got student teachers to the point at which they can conduct an independent science investigation that would show the 'integratedness' of knowledge.''*
> (Anamuah-Mensah, 1999)

This perception was echoed by the Proprietor of Star of Suhum JSS, when interviewed by the researcher. Asked what noticeable changes he could see in the JSS reform he answered: 'the change in JSS curriculum is good but there is not yet any change in personnel. For example, who is a social studies teacher?' He went on to explain that teachers had not been trained specifically in the appropriate methodology for teaching social studies. They had, therefore, continued to teach with the old approach to history, geography, civics, et cetera, as discrete subjects. The efficiency of the planning efforts for teacher provisions may be more correctly assessed at the district level where the bulk of teachers are employed.

The Committee on Technical Education in its 1988 report had projected a teacher requirement of about 1,000 to commence the JSS pre-vocational courses and had recommended an initial recruitment on a part-time basis of people from industries and retired artisans who would be given an eight-week introduction course to teaching followed by a four-week supervised practical training. On a long-term basis, all polytechnics were to introduce

technical teachers' courses. Newly recruited full-time non-professional teachers were to be given induction courses; incentives such as workshop allowance were recommended so as to compete favourably with the private sector in retaining the service of vocational teachers. Indeed, the committee had correctly assessed the requirements for personnel, and made a reasonable plan for the solution, but unfortunately, actual commitment to efforts to improve teacher quality did not match these recommendations, as evidenced in the sort of awareness-creating activities carried out at the regional level.

The integrative characteristics of this innovation element demand a more concerted effort not only in training new teachers, but also in exploring existing expertise within and outside the school environment in order to deploy these to advantage. The Implementation Committee had tentatively proposed the concept of the multi-purpose teacher who could be trained specially to teach a range of pre-vocational subjects. While agreeing with this idea, the researcher would suggest another dimension to this. The possibility has not been considered of deploying teachers to teach topics common to different subject areas. Thus, for instance, the Home Economics teacher could also teach nutrition and food preservation in Introductory Technology; the Social Studies teacher could teach communication and transportation also in Introductory Technology, just as the Physics and Chemistry teachers could each take appropriate topics in other subject areas. This would not only have the advantage of maximising existing expertise in the system, but would, through the interaction resulting from this kind of arrangement, heighten perception and appreciation of the essentially interdependent nature of the innovation in a way that may lead to deeper understanding of the implications of such inter-relationships for school experiences (O'Dwyer et al. 2015; Scherer & Beckmann, 2014).

Similarly, expertise within different sub-systems of the education system could also be extended to new usage by effective linkage. The wasted expertise of the National Inspectors is a case in point, as well as the lack of coordination of the activities of different organs of the Ministries of Education both at regional and national levels.

School Based Data on Conceptualisation

In this research two of the pre-vocational subjects were examined at the JSS: business studies and introductory technology. An illustration from the introductory technology course will serve to indicate some of the confusions in conceptualisation that seem to be inherent in the reform.

The objectives of the introductory technology course can be summarised as follows:

- to provide pre-vocational orientation for further training in technology;
- to provide basic technological literacy for everyday living;
- to stimulate creativity.

During this research the writer tried to explore pupils' perceptions of the JSS curricula they were following, to see how far these aims were being realised. Two contrasting perspectives emerged. In Achimota JSS pupils seemed to be grasping the inter-relationship between introductory technology, other subjects and the world of work. For example, although all of those interviewed did not doubt that they would go into senior secondary school, most did argue on a hypothetical basis that they would become better craftsmen, and be able to set up viable businesses on account of their experience in introductory technology.

One pupil was confident and assured in that he did not consider time spent on introductory technology as wasted. In fact, he had found it helpful in applying knowledge acquired from introductory technology to other subject areas in a practical way. Mathematics was mentioned as an example. Since they needed to design and measure everything they produced during

their workshop sessions, he claimed that he was able to understand mathematics much better and therefore considered introductory technology as an extension of the mathematics lesson.

By contrast, pupils in Sisala JSS did not see this relationship. On visiting the school, the pupils were found to be in front of the workshop queuing up to pay their BEC examination fees. They were asked how they found doing practical work, and they promptly stated that they had no practical learning sessions. 'But you have both equipment and workshop and must be using them'? In reply, to my surprise, they revealed that their only visit to the workshop was that morning and it was to register for the examination. The workshop is opposite the kitchen in front of which stood a water tank.

The tank had a crack from which water flowed to waste. They were asked why they could not have done something to fix the tank. However, they were amused by the suggestion and said that a welder could do it. In any case when it was pointed out that they learnt these things in introductory technology and should be able to apply what they learnt, they insisted that it was a welder's job and had nothing to do with them. They pointed at one boy whose father, they told me, was a welder and could repair the tank. They were then teasing the boy who became embarrassed and denied hotly that his father was a welder.

They were asked how many of them owned the homemade cart children drive for fetching water. Again there was a roar of laughter as they pointed at the same boy saying that I should ask him to bring his cart to show me. They said that he made it himself. Once again the boy denied it. It was clear that these pupils had not been encouraged to acquire a positive attitude towards vocational skills promoted by introductory technology. They simply had no understanding of what it meant, unlike pupils in Achimota JSS. Among the pupils in Sisala JSS in fact, there seemed to be little change in perception or attitude to manual work. Instead,

many of the pupils in Sisala could construct practical tools for use around the home, but could not see any relationship between that and what they thought of as the labourer's craft.

When the proposal was made as to the possibility of making some of these useful things during the introductory technology period, for example a trolley for their grandmothers to help them pull their loads in the villages, they became very interested. They made such comments as:

- that they would require small wheels to fit the trolleys and these were not easy to get;
- one would need to search the mechanic's dumps for them;
- one could ask the mechanist as a favour to reserve any they might get, but some mechanists demand payment;
- the wheels must run on tyres to avoid being caught in the sand as the village roads are not tarred and so one could not use wheels made out of cans as are used for the water cart.

Nevertheless, with a little direction, the Sisala pupils began to demonstrate as much capability at effective problem solving as their colleagues at Achimota. The difference between the two schools is that while Achimota JSS had two teachers, both graduates in Industrial Technology, and had access to workshop practice, Sisala JSS had a science teacher who was a post-secondary certificate ''A'' who had never organised any practical work. Most teachers in the junior secondary schools in Ghana have similar backgrounds to the teachers in Sisala JSS. For them, the training syllabus has not provided sufficient guidance in order to enable them to interpret the concepts of introductory technology effectively and be able to convey them to their pupils.

This chapter has been concerned with explaining conceptual issues and JSS reform. Having discussed an overview of general issues let us now proceed to the analysis of the case studies.

Chapter 6

Analysis of Case Studies

Introduction

The researcher spent six full months during 1999 to 2000 in the three JS Schools, Achimota JSS, Suhum JSS and Sisala JSS), for the case study work phase I. The main purpose of these visits was to ascertain what was going on in the classrooms pertaining to this innovation. And again in 2014 to 2015 he spent four full months for phase II work in order to upgrade data.

Evidence regarding the JSS reform in action at the classroom level was acquired from three main data sources:

- Written curriculum materials – including work schemes, lesson notes and textbooks;
- Interviews;
- Observation of the classroom transactions.

Curriculum Materials (Work Schemes and Lesson Notes)

The work schemes and lesson notes represent the teachers' 'working paper' or 'ground plan' for implementing the innovation. It is hoped to find in them the extent to which teachers have been able to deal with problem-solving responsibility for transforming the 'given' curriculum and localising it in the form of work schemes and lesson notes for application in their specific context. These materials depict the degree of 'adoption' initiative teachers are able to exercise at their boundary of responsibility, and how they conceive the innovation.

I was able to study closely work schemes and lesson notes teachers prepared at Achimota, Suhum and Sisala in two subject areas: Business Studies and Introductory Technology. There is very little evidence of attempts to actually take on the challenge of

decision-making over incorporating in their working documents experiences that would most ensure the satisfactory transaction in the classrooms within their specific contexts.

Available evidence from lesson notes only leads to the conclusion that a wide gap exists between the demand by the innovation for the application of initiative, imagination, resourcefulness, improvisation, enquiry and experimentation to the design and preparation of learning experiences at classroom level and what teachers actually practise in the schools studied (Delamont, 1976). Teachers were prone to be completely open to the textbooks, shying away from making any modifications whatever to the texts. Even where the teachers can be presumed by virtue of their professional background to possess adequate levels of capability to bring about the necessary behaviour changes, there is still the inability to muster that necessary extra level of infrastructural competence sufficient to lead to a higher level of innovation implementation. There is an obvious lack of commitment: a deficiency of effort in making the curriculum content the teacher's own.

Therefore, under Bloom's (1956) classification, the teachers are shown not to have progressed beyond the comprehension level of learning consisting of summarising and using their own words to recall what they have read. They are yet to rise to the higher levels of skills in application, analysis and synthesis and consequently fail to provide for practical activities in the schemes and notes so as to enable students to develop the relevant affective and psychomotor skills. Whereas notes from Achimota included teaching aids the only ones mentioned are the blackboard, chalk and diagram; the concrete things that had been supplied in the form of Introductory Technology equipment are completely left out. In general preparation for lessons are devoid of any attempt to take the lesson beyond the classroom by exposing students to learning experiences that lie in the environment outside. A direct personal experience at Suhum during my phase I visit supports this argument.

Curriculum Materials (Text-Books):

Our example here will be drawn from the textbooks on Business Studies. In Business Studies there has been an effort to localise the textbook by a publisher based in Accra. Some schools therefore have both the CESAC book and one by Adwinsa Publishers, while some may have only one or the other. Both texts however are not readily available in the markets so that even where students can afford to buy they might not be able to find any. Teachers have official copies often delivered by the publishers themselves. The CESAC text (only Book One is now available) begins with a preface explaining the purpose of Business Studies. Once again we are faced with the dilemma of conceptualisation of the purpose of the curriculum innovation for the writers, who include the Director of CESAC, claim that the 'study offers an opportunity for gainful employment even without further studies after Junior Secondary School courses' (emphasis mine). But before discussing this claim I would like first to state that the language of the book is simple and readable, devoid of unnecessary jargon, and can be understood by students even when they work by themselves. Chapter 1 on offices, is well treated, particularly in drawing examples from the school environment. Also there is an effective link up to Chapter 2, introducing commerce, with chapter 1 here again the text has some serious deficiencies.

Indeed, the coverage of topics is too scanty particularly when placed against the claim that it offers opportunity for job preparation. The book is presented in a form of 'brief notes' or summaries of much fuller lessons. The depth of the lesson contents conveys the barest of information to the student. Although some suggestions have been included for out of class activities the attempt to evaluate each lesson is only a focus on 'recall' exercise. Almost all the questions, as in the classroom, tend to demand answers that require only the regurgitation of the facts that have been mastered. In this way, it does not rise above the normal practice of

rote learning.

In treating the topics so briefly the writers have assumed much higher competencies among the users (teachers and students) than we have observed are actually available. There is an implication in this approach that teachers would be able to develop and give full body to the topics perhaps using the textbook only as a guide and revision text. But as will be seen evidently, the tendency has been for teachers to follow whatever material is provided very closely. In any case the CESAC text sounds in parts very much like a study crib – an aid to revision or examination. This might perhaps explain why some of the lessons observed followed a similar pattern where teachers made a list of information without trying to discuss them. The text is in effect no more than just filling out with a few more facts the Business Studies syllabus which the same team had developed. The illustrations, particularly the pictures, are of a very poor quality – mostly too faint. On the whole it seems appropriate to call for a revision of the CESAC text to make a more suitable learning tool and resource for both students and the teachers.

On the other hand, the text by Adwinsa Publishers seems to have gained strength where CESAC failed and vice versa. The Adwinsa Course exhibits the tendency towards the use of jargon and stilted language and occasionally throws up some inexcusable grammatical errors. But the treatment of the subject matter offers much more to the users. The topics are much more detailed and have been localised with examples drawn from regions in Ghana with which users can identify. The illustrations are much better with clearer pictures.

Equipment Supply

My observation is supported by a report by the Commissioner for Education himself, at a meeting with the chairman and Secretary of SEC and Divisional heads at the MOE headquarters in Accra in April 1988. The minutes said that during the Commissioner's tour of

some schools he observed that:

> *"none of the schools visited had put into use the equipment for Introductory Technology supplied to them since 1986. The equipment was simply packed away somewhere ... the situation is disheartening and of great concern to the Regional Commissioner."*

By September 1999 an improvement was seen in the use of equipment. I revisited three of the schools I had used in my 1987 study and found that two of the three were using equipment with differing degrees of seriousness. In Achimota the students claimed that they had never been inside the workshop even though it had already been constructed a year ago. Sisala JSS was yet to finish its workshop, but I was pleased to observe that the teacher brought the items of equipment required for specific lessons into the classroom from the store. We had discussed this point during my visit in June 1999 and I had this suggestion. Therefore, I was glad to see the change. Suhum had just converted one of its unused buildings into a large very well constructed workshop and the equipment was already installed. Unfortunately, this is one of the schools where a teacher had not known that Introductory Technology equipment was supplied in 1986. I have concentrated only on Introductory Technology equipment because that is the only new subject that had equipment supplied. The senior management meeting at the MOE in Accra had in August 1986 discussed the possibility of providing equipment for Business Studies but this was seen as clearly impossible under the present economic situation in the country.

The general picture of the resource situation is obtained from questionnaire responses from the education officials at MOE and GES and from school principals and teachers between October 2014 and January 2015. They were asked to indicate whether the provision of five items of the resources had been satisfactory or otherwise. And here is how they responded:

(i) *Equipment*: all the MOE (17) inspectors agreed that the amount of equipment supplied was

unsatisfactory. This is almost the same proportion that responded among principals. 14 out of 15 had found the provision unsatisfactory. About two thirds (11) of the GES supervisors and well over half of teachers (68) hold the same opinion. More than two thirds (11) of MOE officials however found what was supplied was suitable, an opinion which almost agrees with those of Principals and teachers. All the respondents found the scope for utilisation of equipment unsatisfactory except for Principals among whom as many as half (8) indicated satisfaction with the scope of utilisation of equipment. Such Principals might be trying to defend themselves since they should have responsibility for getting the equipment put into use.

(ii) *Workshops*: here again, well over two thirds of education officials (13 MOE and 11 GES) find the provision and utilisation unsatisfactory. About half of the Principals and teachers think the provision unsatisfactory but even where workshops have been available as many as two thirds have still found the utilisation unsatisfactory.

(iii) *Teaching Materials*: the general pattern of response again shows that the materials have been unsatisfactory both in quantity and quality. All the MOE inspectors think so and more than three quarters of Principals and teachers think the same.

(iv) *Funds*: All principals and almost all MOE officials agreed that the amount of money provided has been unsatisfactory, while about four-fifths in each group found the method of money supply also unsatisfactory. Over three-quarters of teachers and two thirds of GES supervisors were of the same view.

(v) *Staffing*: here respondents were asked to assess different qualities of teacher provision including the number, level of training and different competencies in a variety of activities of the curriculum innovation. It appears that opinion is divided here in some respects between the MOE officials and the principals and teachers. Whereas the MOE officials found teacher qualities unsatisfactory in most cases, the teachers and Principals were more differentiating in

their responses. For example, in only two aspects – staff strength and guidance and counselling practice – did about two-thirds of Principals find the staffing position unsatisfactory. Surprisingly, about three-quarters claimed the teachers' competencies have been unsatisfactory in such activities as using the syllabus, work scheme, using continuous assessment forms and readiness in adapting to change. The teachers themselves admitted their number was unsatisfactory though claiming an above degree of satisfaction in such competencies as the use of the syllabus and work scheme. They seem however to know their limitation a little better than the Principals because less than one-third of them claimed their ability was satisfactory in the continuous assessment and guidance and counselling activities of the innovation.

This slight bias in the views of the Principals needs to be checked against evidence from the school study. I would argue that such an assessment rather comes from lack of grasp and underestimation on the part of the Principals of the actual level of new behaviours and competencies required of teachers by the new curriculum – a requirement that far exceeds what is appropriate for normal practice. It does not however change the picture of the resource provision as it was by the end of the first cycle of implementing the curriculum innovation. The quantity and quality of provision had not been satisfactory although, with the recruitment of teachers in certain subject areas, the situation in staff provision could be said to have relatively improved.

Communication Management in the Classroom

In observing transactions in the classroom the following issues were the main concern of the enquiry: how well the teachers were able to design and organise classroom experiences that reflected the interdependent and integrated concepts subsumed in the innovation; effectively manage communication flow for optimum involvement of all actors in the

classroom; and adopt a problem-oriented approach to the organisation of learning which would stimulate active enquiry, initiative and experimentation in the learners, and lead to the attainment of relevant problem-solving competencies in the cognitive, affective and psychomotor domains as intended.

The evidence here is meant to show the kind of communication management in the classroom with regard to teachers and students during lesson presentations. Excerpts from lesson profiles in figures 6.1- 6.2 depict this interaction pattern. In the profiles of figures 6.1 and 6.2 teachers dominate entirely class activities. Students make only gestures of following the lesson. The researcher observed that teachers' participation in classroom activities overshadowed the students' participation. In essence the students' participation in class was minimal. Therefore teachers should engage students more during their lesson presentations. They should encourage more students to ask questions. There was virtually no discussion in any of the lessons nor was there any form of meaningful interaction among the students when lessons were in progress. The only interaction that took place was between the teacher and the entire class when the lesson was being delivered and also between the teacher and a student who happened to ask a question. In any case a horizontal form of communication was virtually absent in any of the lessons observed.

The only conclusion from evidence before us is that most teachers have yet to acquire that high level I+ capability required by the curriculum innovation to conduct classroom interaction in such a way that there is maximum intra-system communication flow to stimulate full and meaningful participation among all sub-system members.

Figure 6.1: Lesson profile (Introductory Technology) Achimota JSS

Introductory Technology 0-10mins	10-20 minutes	20-40 minutes	40-50 minutes
Teacher Behaviour Starts by demonstrating the moulding of clay with water and sand over the top of the table. Explains in Twi what he is doing because "sometimes it is difficult to explain some technical ideas in English. Leaves sentences unfinished pausing for students to complete the e.g. "You add…you may also…."	Asks "what are props of ceramics? Explains more about the chemical properties of ceramics. Introduces Plastics: the properties and uses.	Asks "What do you mean when you say something is plastic?" Did you say elastic or plastic? Explain property of plastic. Explains in Twi again. Writes brief notes on BB.	Answers student question with another question; "Yes, Haven't you seen a burnt house? You will find the electrical insulation all melted". Introduces Nylon. Gives e. g. of nylon used for shirts. Calls out S4 to show others his nylon singlet. Asks students to identify 2 types of metal and wire in electrical cable. That is all about plastics
Student Behaviour Extremely rowdy. Most students doing other things e.g. assignments in Social Studies and English. Shouting out – Boy next to me is doing English assignment	S1 Answers to question: Heat resistant, Chemical resistant. Others continue as before with other assignments. S3 answers the metal and wire	S2 tries to answer question. No reaction from others. Nobody taking notes from BB. Many still doing work in other subjects. S5 answers "no" S6 "Because thermostat does not melt." Bell rings for end of lesson	

Source G. M. Osei, Fieldwork, 1999-2000

Figure 6.2: Lesson Profile (Introductory Technology) Sisala JSS

Introductory Technology	0-10 minutes	10-20 minutes	20-40 minutes	40-80 minutes
Teacher Behaviour	Revision. Introduction of New Topic	Demonstrates the use Jack on the floor in front of the class. Asks if students know what a see-saw is.	Gets everybody to go out-doors for demon-stration of the see-saw Brings students back into class starts to write out notes on BB	Shows how to work out the formula for Mechanical Advantage (MA) Gives an example for students to work out. Goes round front row to see what students are doing. Works out the answer on BB.
Student Behaviour	Noise of desks as students settle down. Listening	Students behind stand up in order to observe demo of jack. Still can't see. All answer they don't know the see-saw	Go outdoors for demonstration. Two boys demonstrate as teacher directs them others stand and watch. They go back in and start copying notes.	Start working out Formula. Listen to teacher as he works out correct answer on blackboard

Source G. M. Osei, Fieldwork, 1999-2000

Comparison of Responses on Conceptualisation of the JSS Vocational Curriculum

I have argued the hypothesis that the priority definitions given to the characteristics of the JSS curriculum would influence the manner of its implementation. Thus, an emphasis on a pre-vocational comprehensive curriculum would predicate a strategy exposing children to a general course of learning without acquisition of employable skills. This requires a certain kind of curriculum procedure and resource provision as was pointed out by the Director of Education (Planning) in the Ministry of Education. On the other hand, emphasis on job preparation evidently requires a curriculum geared towards an implementation strategy for full job training; while responses highlighting streaming would tend to retain the traditional strategy that favours academic proficiency. The argument therefore is that whichever interpretation takes priority even though the others may also be acknowledged would be likely to influence most of the decision about what implementation strategy should be adopted.

The questionnaire responses in Figure 6.3 show a high level of consensus among the different groups of respondents in regarding the primary objective of the JSS curriculum as offering a prevocational, comprehensive education. All the responding teachers 131 agreed with this interpretation of the objective, more than one third of them (55) agreeing strongly. Almost all the officials from the MOE, GES and teacher training institutions (59) agreed with the comprehensive interpretation, just a little less than three quarters of these (49) in strong agreement. More than three-quarters (415) of the students also held this view. The responses rate streaming much lower. For instance, only about three quarters of teachers (99) agree with this view, a third of them (33) strongly while only a little over half of education officials (39) agree. A little more than three-fifths of students see the new curriculum as for streaming.

With regard to full vocational training a little more than half of the teachers (76) responded positively, most of whom (66) tended to agree. None of the education officials hold

strong views about this but a little more than three-fifths of them (39) tended to agree. However, three-quarters of the students see the purpose of the new curriculum more for job preparation than for academic streaming.

Nevertheless, the questionnaire evidence gives priority to the interpretation which sees the new JSS curriculum as offering a comprehensive pre-vocational education. This puts the other purposes in secondary positions. Therefore from the argument of this study implementation procedures would mostly be influenced by the interpretation with the highest rating: i.e. a pre-vocational comprehensive orientation.

How far then has this view actually been reflected in the problem-solving procedures to support this perception? Further relevant evidence is available from the case study data showing the operation of the innovation in the school context. Such evidence is derived from learning materials, interviews and observation of classroom and other school activities.

Figure 6.3: Comparison of Responses on Conceptualisation of the JSS Vocational Curriculum

Concepts	Respondents	Strongly Agree	Agree	Don't Agree	Not Sure
(i)Voc. Training to get a job	Principals/Teachers MOE/GES Officials Students	17% (21) 8% (5) _	33% (43) 38% (24) 75% (375)	50% (66) 24% (17) 17% (85)	_ 8% (5) 8% (40)
(ii)Streaming for low ability	P/T MOE/GES Students	25% (33) 15% (10) _	50% (66) 46% (29) 67% (335)	25% (33) 24% (17) 25% (125)	 8% (5) 8% (40)
(iii)Streaming for high ability	P/T MOE/GES Students	25% (33) 24% (17) _	50% (66) 38% (24) 67% (335)	25% (33) 24% (17) 25% (125)	 8% (5) 85 (40)
(iv)*Comprehensive education	P/T MOE/GES Students	42% (55) 77% (49) _	58% (76) 15% (10) 83% (415)	 8% (5) 17% (85)	

(v) Voc. Training for self employed	P/T MOE/GES Students	8% (10) 0 _	50% (66) 62% (39) 75% (375)	42% (55) 15% (10) 17% (85)	 15% (10) 8% (40)
(vi)*Basic pre-vocational training	P/T MOE/GES Students	33% (43) 46% (29) _	50% (66) 46% (29) 92% (460)	8% (10) 8% (5) 8% (40)	8% (10)

Source: G. M. Osei Fieldwork Data 2014-2015

Conceptualisation of Continuous Assessment

These two following extracts draw attention to interpretations of the features of continuous assessment (CA). The Commissioner for Education was able to highlight:

(i) The monitoring, guidance-orientation of CA which is in agreement with the NPE and Handbook provisions, and

(ii) *It is also shown as a summative evaluation tool in the cognitive performance domain. Its linkage to the prescribed syllabus is very clear and is to provide information about how well the candidate has achieved.*

The Permanent Secretary extends the discussion to what CA means for the teacher:

(i) He confirms CA as providing a cumulative record that can be used for summative evaluation decision-making;

(ii) He then points out the tender spot: CA is also a 'test' for teacher effectiveness because poor student performance is a reflection of poor teacher competence. CA is then seen as a monitoring tool for teacher control hence the resentment against being 'kept on tip-toes' from teachers;

(iii) *The process of CA is 'scientific' and 'regimented' and so makes far demand on teacher commitment than the old evaluation method.*

In effect, both of these interpretations of the principles of CA apart from the inclusion of formative evaluation for child guidance by the Commissioner, would appear not to have shifted very much from the old orientation as bogey for the control of teachers and students alike. Furthermore, the dominant status of the cognitive domain as the only assessable performance criteria is sustained in these two interpretations.

Further evidence of conceptualisation of CA was thrown up from questionnaires I had administered to three different categories of respondents namely school teachers and

principals, students and officials from the MOE and GES. From a field study from October 2014 to January 2015 in which the researcher had interviewed representatives from the three groups, it had been possible to identify five conceptual assumptions about CA. These include:

(i) assessment for child guidance;

(ii) selection into ability groupings;

(iii) enforced teacher and student productivity;

(iv)reliable and consistent assessment method;

(v) monitoring of teacher effectiveness or self-appraisal mechanism for teachers.

The study assumes that each of these concepts has implications for how the innovation will be implemented both in terms of how people perceive the EL of the innovation and in terms of the BC demands that it entails. Item (i), for example, implies the use of assessment for formative evaluation through which guidance is provided for the student. This presumes a pedagogical style that encourages dynamic classroom transactions which will help them learn effectively and develop ability at self-monitoring. The teaching strategy throws out enough experiences to challenge the learner in varied situations so that he is guided to explore his abilities and interests. Item (ii) highlights streaming and early selection into ability grouping with an embedded sense of competition among groups. This orientation is typical of the old traditional assessment method and agrees with both the Commissioner's and Permanent Secretary's views. Item (iii) sees CA as a measure to enforce student and teacher productivity by firm control through the means of constant examinations, what Black (1980) so aptly described as 'staccato form of summative assessment'. A high degree of coercion from the higher system level of the MOE/GES is implied as well as a very low level of commitment at the teacher/student level. Item (iv) is a concept of CA as a self-evaluation tool for the teacher improvement of his teaching effectiveness. This view implies that the teacher shares the

criticism of classroom transaction, reserving part of the appraisal for reflective self-monitoring instead of making student performance the only focus for appraisal. A new image of the teacher is implied here: one that is prepared to admit short-comings and make corrections. A high degree of professionalism is required to be able to identify and accept errors. This view is embedded in the principle of formative assessment for diagnosing gaps in the learning process whatever may be their source for necessary amendment.

It should be noted that these views are not individually exclusive: they all represent the variety of purposes to which assessment is put but this analysis hopes to discover the priority given to these uses in relation to the innovation: the dominant orientation would indicate the emphasis which actors place on CA and consequently would be assumed to determine how it is to be implemented. Let us now consider the responses data.

Looking at the columns 4 and 3 of Figure 6.4 we find that there is an almost unanimous agreement by teachers and officials about the use of CA for child guidance i.e. formative evaluation for diagnosing the learner's needs and helping him/her to the highest level of achievement according to his/her abilities, interests and aspirations. While half (66) of the teachers strongly agree with this view well over thirds (22) of officials hold the same strong views. During the preliminary interviews it had been discovered that students had no understanding of this concept as they had hardly been involved in either self-appraisal or guidance. For that matter this item had been excluded from their questionnaire advisedly. What significance this clear perception of the formative role of CA has for implementation will remain to be seen later when we examine data on implementation.

The evidence here indicates a not so high priority rating for the perception of CA as a tool primarily for selection in school. For example, although well over half the teachers (76) agree with this view in columns 4 and 3, the proportion in columns 2 and 1 who disagree or

are not sure has gone up considerably to fairly close to half of the respondents. On the other hand, the opinions of officials seem equally divided over selection, but when columns 2 and 1 are taken together with those who had abstained from making any response, we find that streaming has relatively a very low priority rating indeed in the perception of education officials among whom only about half (18) consider selection as priority of CA. Among students, only one-third (165) see CA being used for streaming while a quarter (125) do not agree and over one-third (210) are not sure.

It would appear from the trend of response that there is a dilemma here on how to reconcile the old uses of examination for selection and the new CA orientation: the selection purpose has not elicited an enthusiastic response from any of the groups. Teachers seem closest to admitting the persistence of the dominant role of examination as a selection mechanism. Even students, taking columns 1 and 2 together, would seem to think that streaming would have reduced importance in CA system. In effect, although selection is acknowledged as having a place in CA for the majority of respondents it is not perceived as of dominant importance. But how possible is it to resolve this dilemma in practice?

Evidence from interviews confirm this difficulty. During interviews there was ample evidence of opinions expressed in support of the view that CA is (in practice) to be used for streaming. For example, the Permanent Secretary, MOE, in January 2015 during my interview with him expressed approval of the new method of assessment because… "it will enable the separation of people able to pursue technical subjects." One of the school teachers had also explained that:

> *"purpose of the new system is to give those who can't carry on academically the chance to go out and find other means, perhaps to get a job."*

Another teacher revealed that the "class 3s are now being grouped into those who will continue to JSS and those who will be leaving after this year." Asked on what basis the

selection was being made, she assured me that criteria were mainly student academic ability and interest. She emphasised that:

> *"It is very important that the school maintains its academic standard and also for the good of the child. So even when parents press for change of position to retain the child in school, the decision will still be carried."*

During the case studies carried out in the schools, evidence showed that all the schools under study streamed their classes into ability groups which are usually described in discussions as low performers, clever usually good etc. in a collective manner. Thus this discussion reveals a clear discrepancy between the questionnaire responses among the different groups and what actually is in practice as CA. In practice, the influence of the traditional assessment approach is still very strong and the implications of this proven gap for the innovation will be further explored.

The item on motivation has been split into two in the questionnaire separating motivation for students from motivation for teachers. As many as three-quarters (99) of teachers agree with the view that the purpose of CA is to make students work hard all the time, one-quarter (33) of them agreeing strongly. Well over two-thirds (22) of education officials agree, with more than one-third (12) holding strong views about it. It is interesting that all the 500 students were unanimous that CA is meant to make them work very hard all the time. Similarly, it is clear the teachers feel that CA has been devised to keep them in check and make them work all the time. Almost all of them feel strongly about it. A little less than two thirds (20) of officials see CA as a means to control teachers, half of these (10) agree strongly. More than half (290) of the students also agree that CA is to make teachers work hard. If we should use the officials to represent a neutral opinion to avoid the vested interest of both the teachers and the students, it is still clear that the majority of respondents see CA as a means of enforcing hard work on both teachers and students.

Both teachers' and students' perceptions have been their personal experiences of CA as can be seen from the interviews and observations. For example the CIS at GES considers CA as requiring "more work and dedication by teachers." Teachers in schools think that students now work harder. One cited the example which shows that there is less incidence of truancy in his school because no student wishes to miss a test to avoid having a low cumulative score record. Students on the other hand generally complain of over-work, on one occasion having been subjected to 12 tests in two days. Class 3 students now have to study till late in the night to cope with the assessment. This coercive element of the CA does not seem to have been foreseen in the policy document but interpretation and practice seem to support the assumption.

The reliability of assessment seems to get top rating from all groups of respondents. Half the teachers (66) agree strongly while one-third (33) agree that CA is meant to provide the most reliable assessment method. The entire education officials agree with it: an impressive four-fifths and over (28), strongly agreeing. Even students are almost unanimous in their agreement when 460 of them see CA as a reliable assessment method. This reinforces the claim of the policy documents and is supported by opinions of other actors. For example, the Chief Supervising Principal GES, Ashanti Region, during a lecture at a regional workshop had stated:

> *"CA is an evaluative device which assesses a student on various aspects of personal development at various stages of the learning process so that the outcome of assessment would be a true picture of the individual so assessed and not on a single exam as is usually the case in this country.*

When we come to consider evidence on implementation activities particularly in the school context and some other sources we can judge how much substance there is in the claim that CA is a reliable measure for student performance. One should be able to compare the findings with the attitudes to school-based teacher assessment of the Mode 3 examination

described by Bowe and Whitty (1984) and also Students' Test Motivation in PISA described by Hopfenbeck & Kjaernsli (2016). Evidence will be sought to determine how far in practice CA can be seen to be valid, reliable and acceptable.

This concept of monitoring teacher effectiveness is part of the formative use of CA which allows the teacher to be self-critical so he can review and improve on his teaching strategies for greater effectiveness. Columns 4 and 3 of figure 6.4 show that about two-thirds of teachers (88) are able to see this use of the CA while the same proportion among education officials hold the same view though many more of them do so strongly. Over half (290) of students agree: When items (iv) and (vi) in the figure are compared the trend in the responses in both cases is very close among officials and students. It would seem that there is a tendency for both groups to see a mechanism for the review of teaching strategy as a means to control the teacher. On the whole however this has not achieved a high priority rating among all groups of respondents nor has it been possible to identify any corroborative evidence from other sources on this perception of CA.

What emerges from the analysis of responses from the questionnaires is that the following priority ratings have been made to the various items representing the concepts of CA like this: 1. Reliability/validity of assessment; 2. Provision for child-guided assessment; 3. Mechanism for enforcing productivity among teachers and students. These are seen as the most important purposes of CA in order of priority although it should be noted that for students the third concept takes top position. The lowest rating is given to the selection of CA by all groups. Thus the responses seem to have correctly emphasised some features of the CA which indeed have been highlighted by the policy documents.

It is debatable that such evidence is sufficient to conclusively support the claim that a proper level of understanding of the principles underpinning the innovation exists in the

system. For, although it has been supposed that the trend of responses would be indicative of the interpretation of the innovation and its subsequent implementation, an examination of the evidence shows influences from two perspectives: what respondents thought they understood as the actual normative purpose of CA: and what they thought must be the purpose of CA as seen from its practice. Thus, while the guidance and validity of assessment purposes have been correctly identified, priority was also given to another characteristic which was not included in the policy documents, that of enforcing productivity among teachers and learners. It is instructive that even among education officials who might be expected to be more familiar with the official stipulations, about two-thirds had interpreted this as a major concern of CA. On the other hand, the surprising low rating given to selection as one of the aims of CA must have been based on what is seen to be intended rather than on what is actual practice. Again there is evidence to show that students are streamed according to their cognitive performance in school examinations for, according to one teacher, "it is very important that the school maintains its academic standard." Thus we find another discrepancy between actual practice and intended purpose of CA as shown by questionnaire responses.

Such dissonance suggests that planners and adopters at regional education sub-system levels have not adequately conceptualised the CA and its implications: these have simply been taken as given. Their primary concern had not been with efforts to understand and interpret concepts and objectives. In thus failing to study the underlying principles of the innovation so as to evolve effective linkages between the principles and implementation strategies, the State sub-system level has demonstrated a deficient infrastructural (I) capability in conceptualisation, similar to the failing with the curriculum innovation. Such failure to grasp the basic principles of interdependence and integration in the planning, design and management of this innovation leads to distortions in decisions at other phases of the process.

Figure 6.4 Responses on Conceptualisation of Continuous Assessment

		4	3	2	1	0 for non respondents
Concept	Respondents	Strongly Agree %	Agree %	Do not Agree %	Not Sure %	Total %
(i)Assessment for Child Guidance	Teachers Education Officials	50 (66) 68 (22)	42 (55) 24 (8)	8 (10) 8 (3)	nil nil	100 (131) 100 (33)
(ii)Ability Selection	Teachers Educ. Officials Students	17 (22) 8 (3)	41 (54) 38 (12) 33 (165)	25 (33) 38 (12) 25 (125)	17 (22) 8 (3)	100 (131) No resp 8(3)Total 100(33) 100 (500)
(iii)Motivation to hard work for students	Teachers Educ. Officials Students	25 (33) 38 (12)	50 (66) 31 (10) 100 (500)	17 (22) 15 (5)	8 (10) 8 (3)	100 (131) No resp 8(3)Total 100(33)
(iv)Teacher control mechanism	Teachers Educ. Officials Students	25 (33) 31 (10)	67 (88) 31 (10) 58 (290)	8 (10) 15 (5) 25 (125)	- 15 (5) 17 (85)	100 (131) No resp 8(3)Total 100(33) 100 (500)
(v)Reliable assessment method	Teachers Educ. Officials Students	50 (66) 85 (28)	33 (43) 15 (5) 92 (460)	17 (22)	 8 (40)	100 (131) 100 (33) 100 (500)
(vi)Monitoring teacher effectiveness/self Appraisal mechanism	Teachers Educ. Officials Students	17 (22) 38 (12)	50 (66) 31 (10) 58 (290)	25 (33) 15 (5) 33 (55)	8 (10) 8 (3) 8 (40)	100 (131) No resp 8(3)Total 100(33) 99 (495)

Figures in ( ) represents actual numbers not percentages

Source: G. M. Osei Fieldwork Data 2014-2015.

Characteristics, Attitudes and Values of Teachers in Junior Secondary Schools

The occupation of this vital role in education necessitates that a closer look must be taken of the group of people who are charged with the duty of educating JSS pupils: that is, the teachers. By so doing, it is hoped that the influence of teachers' attitudes and values on the JSS pupils may become apparent. It is possible that if such a relationship is established, then planners could effect change in JSS pupils' attitudes and values via those of teachers.

Before discussing the characteristics of the teacher sample in this survey, it must be understood that the teachers were selected from the three case study sites in three regions. The

characteristics and attitudes, which may be stated here, therefore, do not necessarily form the norm for Ghana as a whole, for there are ten different regions within the country.

For the purpose of this study, however, it is sufficient to examine some of the main characteristics of JSS teachers, which are sufficiently recognised as having influence over attitude formation in JSS pupils.

Personal Characteristics

Composition by Gender:

Of the JSS teacher sample: out of the 50 teachers surveyed, 30(60%) were male and 20 (40%) were female.

Composition of teachers' sample by age:

Teachers were grouped under five age groups and it was discovered that nobody was below twenty years; 14.8% fell within twenty to twenty-five years; 45.6% were aged between twenty-six and thirty-five; 15.4% were aged between thirty-six and forty; 24.2% were aged above forty-one. Of course, majority of teachers were aged between twenty-six and thirty-five years. This discovery is very significant and the implication is that majority of teachers were still young and therefore could render long service to the Ghana Education Service (GES), carrying their current attitudes/perceptions with them.

Educational Qualification:

Teaching as a recognised profession in Ghana, requires some basic educational standards which could be categorised as:

- 4-year Certificate 'A';
- 2-year Certificate 'B';
- Post-Secondary Certificate 'A';
- Specialist or Diploma Certificate, which are all obtained from a teacher training college,
- and more recently Bachelor's Degree, which is obtained from a College or University.

Apart from these categories, there are other teachers who have had no teacher training and they are therefore termed untrained teachers. In this category, three types of untrained teachers emerge; Secondary School leavers, Middle School leavers and Technical/Vocational School leavers.

The survey shows that JSS teachers are grouped by their highest qualification as follows:

- Bachelor's Degree 4%
- Specialist or Diploma Certificate 13%
- Post-Secondary Certificate 'A' 73%
- 4-year Certificate 'A' 6%
- 2-year Certificate 'B' 0.7%
- Secondary Untrained 2.7%.

A large proportion of JSS teachers (73%) is therefore Post-Secondary Trained Teachers. Currently, all Teacher Training Colleges offer the 3-year Post Secondary programme. The minimum admission requirements are either 'O' level or SSSCE certificate. It must be noted however that under the new structure of education, the basic qualification for teaching in basic schools is the Diploma in Basic Education. At the moment, there are over 100,000 Certificate 'A' teachers in basic schools who need to be upgraded to the diploma level. Teacher education is therefore very important, especially for a developing country such as Ghana. This is because without the teacher, no formal education can take place.

Type of Schools in which JSS Teachers have taught:

However, it was discovered that only 0.7% of teachers have taught in the former middle schools before they were converted to the new system and 99.3% presently teach in Junior Secondary Schools. That means that overwhelming majority of JSS teachers surveyed did not have the opportunity of teaching in the former middle schools.

Length of Teaching Experience:

Whereas only 3.4% of teachers have taught for less than one year, 13.4% have taught for one to two years, 18.1% have taught for three to five years, 22.1% have taught for six to ten years and 43% have taught for over ten years. This means that majority of teachers (65.1%) have had five or more years' teaching experience.

Teachers' Opinion about Their School Location:

Teachers were asked about the location of their schools whether in a rural or an urban area. It is revealing to note that only 37.6% of teachers stated that their schools were located rurally. The majority of teachers (62.4%) said they thought their schools were urban-located. The reasons for this response is not clear although it may be suggested that many teachers consider a village with some amenities such as a post office, piped water and electricity supply as urban. In other words, majority of teachers did not consider population concentration or location as a criterion for rural/urban differentiation.

Teachers' Region of Origin:

Ghana is divided into ten regions and teachers were asked to name their regions of origin. Only 4% of teachers identified themselves as coming from Northern region; 4.7% of teachers come from Brong Ahafo region; 4.7% of teachers also come from Western region; 6.7% from Greater Accra; 5.4% from Ashanti region; 5.4% also from Central region; and 16.1% come from Volta region. However, the majority (51.8%) of remaining teachers come from Eastern region. It could therefore be concluded that the teaching activities of teachers have a regional (inter-Regional) outlook more than local. A teacher sees herself/himself as providing an essential service for the nation rather than for her/his immediate local community.

Teachers' Nationality

Teachers were asked to indicate their nationality. It is very interesting to note that all JSS teachers (100%) are Ghanaians. The deduction, which could be made here, is that even though they may all claim to be Ghanaians, it seems likely that some may also come from Togo. A large proportion of JSS teachers in this survey come from Volta region, which historically had links with Togo. The Ewes in Volta Region of Ghana and Ewes in Togo have similar characteristics and they also share a common language and culture, and also a common border (N'tchougan-Sonou, 2000).

Teachers' Educational Sites:

Overwhelming majority of teachers (94%), however, were educated entirely in Ghana. Only 6% of teachers surveyed received part of their education outside Ghana. These teachers received part of their education mostly from the neighbouring countries such as Togo, Burkina Faso and Nigeria.

Teaching experience outside Ghana: Only 4% of JSS teachers reported that they have taught outside Ghana. In the 1980s, these teachers were in high demand to teach in secondary schools in Nigeria. Overwhelming majority of teachers (96%) have never taught outside Ghana.

Teachers' Views on Curriculum and Employment

This section was to afford teachers the opportunity to express their views about the relevance of the junior secondary school (JSS) curriculum in terms of the skills required in occupations available in Ghana. Figure 6.4 below shows the responses of teachers to the questions.

When teachers were asked about the relevance of their teaching to JSS, 59.1% responded that, in their opinion the present school syllabus was useful to pupils who pursue higher education; 34.2% said it was relevant to pupils who either go into industries or who go

on to higher education; 6.7% were not sure of the relevance of the syllabus as such. What this means is that majority of teachers thought the school syllabus was too academic, with insufficient skill-oriented subjects. Because about one-fifth of the teachers said they were not sure of the role the school syllabus played in producing either academic pupils or pupils for industries, a question was put to them to ascertain whether they considered the present syllabus was adequate in all respects. To this question, 64.6% of teachers found the school syllabus to be inadequate, 22.2% said it was adequate whereas 13.2% were not sure. To some extent, it could be argued that although majority of teachers noted some form of inadequacy in the present content of the school syllabus, they felt they were compelled to use it the way it was. For a confirmation of this argument, teachers were asked whether, if they had their own way, they would change the JSS syllabus and whether they thought their views about the school syllabus mattered to the people who were responsible for writing it.

Figure 6.5: Teachers'-Views on Curriculum and Employment

Items	Percentage Responses				
	5	4	3	2	1
Pupils who go direct from JSS into employment have better prospects for advancement than those who remain in school or college	2.7	8.1	6.0	38.3	45.0
The teacher who is familiar with what goes on in Ghanaian industries is making a more valuable contribution than the one who does not	22.8	45.6	14.1	13.4	4.0
Pupils who acquire job skills through experience on the job get promoted less than pupils who have JSS experience	4.7	26.8	26.8	26.8	14.8
Industrial employment is appropriate for the JSS leavers who are unable to go on to senior secondary school	4.7	23.5	12.1	36.9	22.8
The present official syllabus is more relevant to pupils who go on to higher secondary education after completing the JSS, rather than to those who do not	14.1	45.0	6.7	29.5	4.7

I think the JSS syllabus is acceptable the way it is	.7	36.9	6.7	43.6	12.1
Pupils should be responsible for their own learning	4.7	17.4	7.4	41.6	28.9
If I were given the chance, I would reframe the JSS syllabus	22.1	51.0	14.1	10.7	2.0

N = 50

Legend
5 = Strongly Agree
4 = Agree
3 = Not Sure or Don't know
2 = Disagree
1 = Strongly Disagree

Source: Fieldwork Data: G. M. Osei, 1999-2000

Figure 6.6: Teachers'- Views on the Role of the JSS Teacher

Items	Percentage Responses				
	5	4	3	2	1
The main task of the teacher is to explain and communicate course content	11.4	46.3	--	32.9	9.4
Education is the business of teachers, not parents	3.4	4.7	.7	38.9	52.3
The role of the teacher includes advising on suitable careers	41.6	51.7	--	2.7	4.0

N = 50

Legend

5 = Strongly Agree

4 = Agree

3 = Not Sure or Don't know

2 = Disagree

1 = Strongly Disagree

Source: Fieldwork Data, G. M. Osei, 1999-2000

Analysis of their responses shows that majority of teachers (73.1%) would like the school syllabus to be reframed; 12.7% thought it should not and 14.1% were not sure. At the time, 48.0% thought that teachers' views mattered to the syllabus writers while 35.4% thought their views were unimportant to syllabus writers and 16.6% were unsure. The implication of these results could be that:

- although the syllabus could be considered to be inadequate, about one-third (35.4%) of the teachers felt that they were not competent enough to suggest possible changes to it;
- about one-half of the teachers (48.0%) felt that by virtue of their positions as the users of the syllabus, they had a right to be consulted on any changes that writers of the syllabus may wish to make to it.

It is possible, however, that the wish to reframe the school syllabus on the part of some teachers does not arise from objections to the content of the syllabus, but rather from the way headteachers allowed flexibility in using it. Teachers were therefore asked if their headteachers allowed them to adapt the syllabus in the process of their teaching. The majority of teachers (56.7%) were allowed to adapt the syllabus while 27.2% were strictly instructed by their headteachers to go according to the syllabus; only 16.2% were not sure of their headteachers' position on this matter. It appears, therefore, that the wish of majority of teachers to reframe the syllabus does not stem from hierarchical pressure from headteachers.

Two questions were put to teachers to ascertain indirectly the source of their discontent with the school syllabus: 'Familiarity with what goes on in industries is valuable in teaching' and 'industries are the best employment for JSS leavers who are unable to continue their education'.

It is revealing to note that majority of teachers (59.7%) did not think that industries constitute good employment for JSS leavers and only 28.2% thought otherwise, while 12.1%

of teachers responded that they were not sure. Again, majority of teachers (68.4%) considered knowledge about industries as an advantage in teaching JSS pupils.

The deduction which could be made from these responses is that teachers were aware that majority of their JSS pupils may take up jobs in industries and therefore the syllabus must be written with a bias towards the interest of these pupils in mind. At present, though, this is not the case and teachers are therefore discontent with the school syllabus.

Nor did they appear disillusioned at the process of qualification escalation. They knew only too plainly that it had largely closed off technical, clerical and even teaching employment to JSS graduates and had made the BECE necessary even for street cleaners, bar-tenders and labourers. Indeed, majority of teachers said that they had told their pupils what kind of employment they could expect, if they were equipped with only the BECE. Low-level manual jobs were all they could envisage yet they did not find this regrettable.

As a sequence to teachers' views on curriculum and employment, what did teachers think about their role? Although 42.3% of them disagreed, over half of teachers (57.7%) thought that 'the main task of the teacher is to explain and communicate course content'. It is revealing to note that an overwhelming majority of teachers (91.2%) disagreed that 'education is the business of only teachers not parents', only 8.1% thought otherwise, while 0.7% of teachers responded that they were not sure. An overwhelming majority of teachers (93.3%) thought that 'the role of the teacher includes advising on suitable careers', and only 6.7% thought otherwise.

It could also be argued that the role of the teacher includes helping young people discover their talents, aptitudes, potentials, and appreciate the use of both the hand and mind.

Teachers' Views on the JSS Reform and its Implementation

This section was to give teachers the opportunity to express their views about the introduction of the JSS, and its progress. Overwhelming majority of teachers (87.9%) were aware of the purpose and significance of the JSS Leaving Certificate only 6.7% were not, whereas only 5.4% of teachers responded that they were not sure.

But when teachers were asked about its introduction into their schools, the majority (72.5%) indicated that they supported it and only 26.2% thought otherwise, while 1.3% of teachers responded that they were not sure. In responding to a question about how the introduction of the JSS affected their professional future, 61.7% of teachers indicated that it would enhance their professional future, only 4.7% thought otherwise, while 33.6% of teachers stated that it would have no impact on their professional future.

When teachers were asked whether additional training was required to prepare for the JSS syllabus, over half of them (53.7%) indicated that more training was needed, only 9.4% of teachers indicated that only an introduction was needed, while 36.9% of teachers responded that no additional training at all was required.

It is interesting to note that about one-half of teachers (50.3%) did not have knowledge of the JSS at the time of its implementation, and 49.3% of teachers responded that they had some knowledge of it at the time of its implementation. Quite a number of teachers (52.3%) did not teach a JSS subject before, and 47.7% of teachers have taught a JSS subject before. One teacher's confession was typical,

> *''It is unfortunate that we teachers who are supposed to operate the Junior Secondary School have had almost no discussion, etc. on what the whole thing is about. I cannot comment on it because I don't know anything worth talking about.''* (Sisala JSS teacher)

The few who professed to know something of the JSS stressed the need for re-training, better incentives, higher pay and improved conditions of service. A teacher from Suhum JSS observed:

> *''When we were at school we were made to learn things off by heart without first understanding them. For example, I know that if you want to divide by a fraction, you turn it upside down and multiply. Why it was so, I did not know. Now the emphasis is on reasoning things out with the children. This is quite good.''*
> (Suhum JSS teacher)

The current generation of teachers then was not just reproducing their own experience. They felt they had made some advances. Majority of teachers however, commented very adversely on the implementation. Poor organisation, deficient training, deficient equipment, the total failure to provide follow-up support made the venture a failure in the view of almost everyone. ''The aims are laudable, but the organisation and equipping have negated the useful objectives of the system,'' was the judgement of one teacher.

However, only a few suggested that the shortcomings were as bad and that the programme should be discontinued altogether. The majority of teachers felt that attempts should persist to improve it. Even more so, it is of interest that a large proportion of teachers (81.9%) indicated that they were enthusiastic about participating in the JSS programme, with 11.4% thinking otherwise; whereas only 6.7% of teachers responded that they were not sure. A large proportion of the number of teachers (61.1%) indicated that they had concerns about the JSS curriculum, only 36.9% thought otherwise while 2.0% of teachers stated that they were unsure.

Quite a number of teachers (59.1%) believed that a JSS student (in comparison with equivalent students of the former education system) would be viewed as academically inferior by an employer in Ghana, 21.5% thought the opposite, while 19.5% of teachers responded that both students would be viewed the same. A large percentage (41.6%) of teachers believed that

a JSS student (in comparison with equivalent students of the former education system) would be viewed as academically inferior by an employer in another West African country, 20.8% thought the opposite, while 37.6% of teachers responded that both students would be viewed the same. Almost half of teachers (49.7%) believed that a JSS student (in comparison with equivalent students of the former education system) would be viewed academically inferior by a headteacher of a senior secondary school in Ghana, 19.5% thought the opposite, while 30.9% of teachers responded that both students would be viewed the same. A large percentage of teachers (37.6%) believed that a JSS student (in comparison with equivalent students of the former education system) would be viewed worse by a headteacher of a senior secondary school from other West African countries, only 18.1% thought otherwise, while 44.3% of teachers stated that both students would be viewed the same.

It is not unfair to conclude then, that while there was some acceptance of improvement and reform, when they were clear and well communicated, there was also some reservation about the benefits of some changes (Duflo & Kremer, 2011; Helbling & Sacchi, 2014). Even if the objectives of the JSS reform were known to these teachers, there was no assurance that they would have been unreservedly embraced and implemented.

In summary, on the whole, teachers were willing to consider change and efforts for improvement. However, imperfections in communication made it more than probable that their classroom teaching would reflect less of the thinking of the JSS reform, and rather more of the practices associated with achieving good formal examination results.

Having discussed the teachers' responses now let us turn to the pupils' responses.

Structural Characteristics, Attitudes and Perceptions of JSS Students

Perception and self-concept, like habits, derive from experiences, which the individual acquires in her/his environment. The formative influences of predictable human behaviour, therefore occur over a period of time.

Perceptions like self-concepts are products of attitudes. To talk about perception and self-concept of a group of people therefore, requires that this defined group must have performed together in the same or similar environments over a significant period of time. Consequently to talk of perceptions and self-concepts of JSS pupils requires that we establish a certain time continuum over which such pupils have had similar experiences as a group. The establishment of such a continuum will help to validate any arguments advanced towards the attitudinal characteristics of JSS pupils as a unique group in its own right. Let us therefore begin with an examination of JSS pupils' attitudes by looking at the structure of groups representing this sector of the school population.

Structure of the Sample

Figure 6.6 shows that 45% of the JSS 3 pupils interviewed came from Achimota in Greater Accra Region; 35% from Suhum in Eastern Region; and 20% from Sisala in Northern Region. The sample, at least quantitatively, represented the three regions in which the survey was conducted. The low percentage attributed to the Northern Region is in accordance with the relatively low incidence of schooling in that region. The values and attitudes of this population are therefore normally representative of both urban and rural pupils.

It appears that age is a significant factor. The age of the JSS 3 pupils ranged from 13 - 15. There is a cluster of students found to be 13 - 14 years, and another cluster comprising the oldest pupils, who are between 14 to 15 years. However, there were only 2 pupils who were 16

years old. The majority of the pupils (85%) fall within 14-15 year range with the average age of the JSS 3 pupils being 15 years.

JSS Pupils' Views about School in General

The pupils in JSS 3 in the three case study schools were asked to indicate their attitudes towards school and schoolwork by responding to specific statements focusing on:

Figure 6.7: Representation of JSS pupils interviewed

School	Frequency or No. Interviewed	Percentage
Achimota JSS	45	45
Suhum JSS	35	35
Sisala JSS	20	20
Total	100	100

N = 100 S.D. = 0.77

S.D. = Standard Deviation. This is an index signifying the amount of dispersion that the number of people interviewed is from the mean. In this particular measurement, since S.D. = 0.77, means 84% of the sample were above the mean which was 1.64 pupils

Figure 6.8: Representation by Sex in JS Schools.

Sex	Frequency	Percentage
Male	53	53
Female	47	47
Total	100	100

N = 100 S.D. = 0.50

Source: Fieldwork Data. All tables in this section are from the fieldwork data analysis.
(G. M. Osei, Fieldwork Data).

- like and dislike of school
- interest in and boredom with schoolwork
- perceptions of the value of school, schoolwork and the JSS curriculum.

The study revealed a very positive picture with regard to pupils' liking for school. The overwhelming majority of the pupils (96%) indicated that they were very happy when they were at school ('strongly agree' or 'agree'). However, small minorities of pupils in JSS 3 appeared to hold negative attitudes. Only 1.8% 'disagreed' or 'strongly disagreed' with this statement (i.e. disliked school), while 2.2% of pupils responded that they were not sure. A central purpose of school education is the initiation of young people into the knowledge, skills and values of society. It could be inferred that most of these young ones can be expected to regard school education as a good in itself, worth having, whatever one's eventual employment may be.

When pupils were asked the level of difficulty in their schoolwork, majority of the pupils (57.6%) responded that schoolwork was easy. Only 1.8% of the pupils found it difficult, whereas 40.6% of the pupils considered their schoolwork to be of 'average' difficulty.

It is interesting to note that the majority of pupils (90.8%) thought that homework helped them to do well at school, and only 3.7% thought otherwise, while 5.5% of pupils responded that they were not sure. Significantly, in view of the stated objectives of the JSS, the majority of pupils (88.3%) thought that what they learnt at school would help them get a job, only 8% thought otherwise, whereas 3.7% of pupils responded that they were not sure. The majority of pupils (83.75%) thought that their Record of Achievement would be of use when they wanted a job, only 8.6% thought otherwise, while 7.7% of pupils responded that they were not sure. Two minor amplifications are appropriate here. Both relate to what might be called 'realism' of the hopes and expectations of the pupils. First, many young people hoped for jobs than thought they could get them, if they qualified with only BECE. The second aspect of 'realism' involved the kind of a job these pupils had in mind. Public belief is still strong that the educated still dream of white-collar jobs as clerks and administrators.

There may be doubts as to whether these young people of 13-15 years knew very much about the relative earnings of different occupations. However, they did appear to have accurate knowledge about the main sources of livelihood in their localities. Certainly, they knew that very few were salaried workers and that most were self-employed. Whether their knowledge of income was detailed or accurate is perhaps less important than their perceptions, and how these perceptions influenced their behaviour. Nevertheless, it is indeed also possible that, in these responses, the pupils of Sisala in the Northern Region, the pupils of Suhum in the Eastern Region and the pupils of Achimota in the Greater Accra Region at least were conforming to the belief that what determines income is not so much ability or education as hard work, so that prosperity is attainable by all – the image of the illiterate millionaire entrepreneur is still valued widely.

Pupils' responses to the statement 'school helps me to do well in examinations, like JSS Leaving Certificate' showed that overwhelming majority of pupils (97%) agreed with the statement. Very few pupils in either three JS schools' groups (1.5%) disagreed with the statement, while (0.6%) of pupils indicated that they were not sure. These findings suggest that the pupils had become more aware of the importance of doing well in examinations.

Most importantly is that majorities in all the pupil groups believed that hard work was the chief ingredient of at least examination success. The inference is that most pupils hold themselves responsible for their own performances. A further inference is that those who wanted to study further or get jobs would be very concerned that their schoolwork be directed towards success in the exams and not frittered away in other directions.

When presented with a negative statement, the proportions of pupils in the three groups who disagreed with the statement 'Most of the time I don't want to go to school' (i.e. who expressed a favourable attitude) were considerably smaller than those who had shown

favourable attitudes on the previous statements. About 84 percent of the pupils disagreed with the statement. Only 11.1% agreed with the statement that most of the time they did not want to go to school. Whereas 4.3% of pupils responded that they were not sure. Although at first sight this may seem to be a cause for concern, it is possible that some of the pupils making this negative response did not actively dislike school but simply preferred pursuing other interests or activities.

It is essential that schools encourage young people to develop the capacity to see learning and creative thinking as integral to their experiences and relationship throughout life. Increasingly pupils are living lives that require them to change and adapt and to recognise that learning is not just a matter of acquiring new information but of making new connections. Overwhelming majority of pupils (86.5%) liked keeping a record of what they did well in their Record of Achievement folder; only 9.3% thought it was not important, while 4.3% of pupils indicated that they were not sure. The implication is that it is essential that young people know what it means to succeed in life. And all that is required is hard work in their studies if they want to succeed and become great.

It is revealing to note that the overwhelming majority of pupils (96.3%) believed that their parents thought it was important for them to do well at school, only 3.3% thought otherwise, while 0.3% of pupils responded that they did not know. Their responses suggest that, although majority of parents demonstrate interest in their children's progress at school in a practical way, a minority do not. Of interest is that amongst the parent groups, the stress was on hard work as the chief constituent of scholastic success. The irony is that for many students and parents, these efforts have done little to alter access either to formal training institutions or to formal sector employment. Both have simply become harder to reach as competition has

intensified. Perhaps this long faith in schooling has to do with the mystique of education; that is to say, a cultural attribute.

The issue of discipline within schools is an important one and many people would argue that without discipline it is difficult to provide an effective learning environment. It is worth noting that the overwhelming majority of pupils (97.9%) believed that their parents were concerned that they should behave well in school, with 2.1% thinking otherwise. The implication is that a large proportion of these young ones were aware that their parents expected them to show courtesy, respect, and obedience to their teachers as well as to others. In essence the majority of pupils were conscious of self-discipline.

Pupils were also asked to respond to four negative statements: 'What I learn at school will not help me get a job', 'Record of achievement will not be of any use when I want a job', 'I do not like lessons where I have to solve problems' and 'I do not like lessons where I have to work in groups with others'. The findings that indicate that majority of pupils disagreed with these statements would seem to confirm the trend indicated above. It is very encouraging to find that a significant majority of pupils in these three groups rejected the view that what they learnt at school would not help them get a job. They also rejected the view that record of achievement would not be of any use when they wanted a job. About 71.4% of pupils in the three groups opted for the most positive options (i.e. agreeing that they liked lessons where they had to solve problems). Only 16.9 percent opted for the negative options and 11.7 % of pupils indicated that they were not sure. Similarly, over 66 % of the three samples disagreed with the statement 'I do not like lessons where I have to work in groups with others'. Only about eight percent of pupils from each sample agreed with this statement (i.e. held negative views about the value of group work), whereas 9.2% of the three samples indicated that they were not sure.

It is extremely important that young people cultivate the capacity to perform independently in pursuance of their own needs and aspirations. The following finding can also be found in Osei (2007:12).

Pupils' Views on the JSS Curriculum

This section was to afford pupils the opportunity to express their views about JSS Curriculum. Figure 6.8 below shows the responses of pupils to the questions. Analysis of responses shows that overwhelming majority of pupils (95.4%) liked English, 3.6% disliked it; whereas only 0.9% of pupils stated that they were unsure. The implication is that since English is the medium of instruction in Ghanaian schools it is appropriate for all pupils to like it because their success in examinations depends solely on their ability to understand the language and use it proficiently and effectively.

Figure 6.9: Pupils' - Views on Curriculum

Items	Percentage Responses				
	5	4	3	2	1
I do not like English	1.8	1.8	0.9	12.3	83.1
I like a Ghanaian Language	48.3	39.1	4.9	4.6	3.1
I like French	40.6	44.3	5.8	5.8	3.4
I do not like Mathematics	3.1	4.9	1.8	20.9	69.2
I like Social Studies	61.8	32.3	1.5	2.2	2.2
I like Physical Education	39.7	42.2	9.5	4.6	4.0
I like General Science	77.5	17.5	0.6	0.9	3.4
I do not like Metal work	6.8	10.8	15.7	35.7	31.1
I like Wood work	25.8	36.8	18.2	14.2	5.2
I like Technical Drawing	39.4	42.5	9.2	3.7	4.9

I do not like Cultural Studies	5.8	6.2	3.0	26.2	58.8
I like Agricultural Science	52.9	36.6	5.8	2.5	2.2
I like Home Science	38.2	42.2	9.2	7.4	3.1
I do not like Crafts	4.3	10.5	16.9	35.1	33.2
I like Automobile practice	20.0	30.2	20.9	17.2	11.7
I like Masonry	12.3	31.4	19.7	20.0	16.6
I like Commercial subjects	42.5	42.8	5.8	4.9	4.0
I do not like Beauty culture	7.7	15.4	19.4	31.1	26.5
I like Marine Science	26.2	32.3	20.0	10.8	10.8
I like Pottery	29.5	42.2	9.5	12.9	5.8

Source: Fieldwork G. M. Osei, 199-2000

Particularly interesting is that overwhelming majority of pupils (87.4%) indicated that they liked a Ghanaian Language, 7.7% thought otherwise, while 4.9% of pupils stated that they were not sure. The significance here is that the JSS reform made it compulsory for each pupil to learn his or her own language and the local language will be the medium of instruction for the first three years of primary education. Clearly this is a welcome initiative.

It is worthy to note that overwhelming majority of pupils (84.9%) stated that they liked French, 9.2% thought otherwise, whereas 5.8% of pupils responded that they were not sure. It could be inferred that majority of pupils considered the importance of learning French as Ghana's neighbouring countries: Togo in the east, La Cote d'Ivoire in the west and Burkina Faso in the north, all use French as their official language as well - as a medium of instruction in schools. Therefore, for Ghanaian pupils to be able to communicate with their neighbours they needed to learn French. Of particular interest was that overwhelming majority of pupils (90.1%) stated that they liked Mathematics, 8.0% thought otherwise, while 1.8% of pupils

responded that they were not sure. Overwhelming majority of pupils (94.1%) indicated that they liked Social Studies, with 4.4% thinking otherwise, whereas 1.5% of pupils responded that they were not sure. It is worthy to note that majority of pupils (81.9%) stated that they liked Physical Education, 8.6% thought otherwise, while 9.5% of pupils responded that they were not sure. The overwhelming majority of pupils (95%) indicated that they liked General Science, 4.3% thought otherwise, while 0.6% of pupils responded that they were not sure. The response could be inferred to mean that responding to the need to equip the Ghanaian child to understand the modern scientific and technological world would be met with cooperation and genuine interest. The following finding can also be found in (Osei, 2004: 15).

Significantly, in view of the stated objectives of the JSS, majority of pupils (81.9%) indicated that they liked Technical Drawing, 8.6% disliked it, and while 9.2% of pupils responded that they were not sure. A large proportion of pupils (66.8%) indicated that they liked Metalwork, 17.6% thought otherwise, whereas 15.7% of pupils responded that they were not sure. It is also interesting to note that majority of pupils (61%) stated that they liked Wood work, 19.4% thought otherwise, while 37.5% of pupils responded that they were not sure. One pupil's response was typical,

''Yes, I like Woodwork, but there is no workshop and we don't do the practical''

However, another pupil's confession was also typical,

''No I do not like Metal work, because Metalwork is not for girls''

It was also vital to bear in mind in analysing this new data, that central tenet of Foster's vocational school fallacy – that schools and their (vocational) curricula can have little determinative influence on student perceptions of opportunities, occupational aspirations or destinations. But in revisiting their attitudes, the researcher wanted to be able to look at

whether the new vocational streams and tracks appeared to have any influence on pupil orientations.

However, overwhelming majority of pupils (85%) indicated that they liked Cultural Studies, 12% thought otherwise, while 3.0% of pupils responded that they were not sure. Significantly, in view of the stated objectives of the JSS, thus the usefulness to the Ghanaian child of acquiring a sense of cultural identity and dignity is clear.

Of particular interest was the overwhelming number of pupils (89.5%) who indicated that they liked Agricultural Science, 4.7% thought otherwise, while 5.8% of pupils responded that they were not sure. Overwhelming majority of pupils (80.4%) indicated that they liked Home Science, 7.4% thought otherwise, whereas 9.2% of pupils stated that they were not sure. Nevertheless, majority of pupils (68.3%) indicated that they liked Crafts, 14.8% thought otherwise, whereas 16.9% of pupils responded that they were not sure. It is as well to note that one-half of the pupils (50%) indicated that they liked Automobile practice, 28.9% thought otherwise, while 20.9% of pupils indicated that they were not sure. The response could mean that pupils realised the importance of acquiring vocational skills, since a significant aspect of the reforms was the integration of general and technical/vocational education to inculcate in the individual an understanding of the world of work.

Indeed, a large proportion of pupils (58.5%) indicated that they liked Marine Science, 21.6% thought otherwise, whereas 20% of pupils responded that they were not sure. An overwhelming majority of pupils (71.7%) indicated that they liked pottery, 18.7% thought otherwise, while 9.5% of pupils stated that they were not sure. It is as well to note that less than one-half of the pupils (43.7%) indicated that they liked Masonry, 36.6% thought otherwise, while 19.7% of pupils responded that they were not sure. A large proportion of

pupils (57.6%) indicated that they liked Beauty culture, 23.1% thought otherwise, whereas 19.4% of pupils responded that they were not sure. However, overwhelming majority of pupils (85.3%) indicated that they liked Commercial subjects, only 8.9% thought otherwise, whereas 5.8% of pupils responded that they were not sure. Furthermore, it could be inferred that pupils were ready to acquire vocational/technical skills.

Pupils were asked to indicate whether they would take the JSS Leaving Certificate Examination or not. It was striking to note that all JSS 3 pupils (100%) indicated that they would take the BECE, and that overwhelming majority of pupils commented very favourably on the JSS:

> *''The best aspects of the JSS curriculum in my view are French and English, which will help me to communicate with other people''* (Achimota JSS 3 pupil).

> *''Subjects like pre-vocational skills and pre-technical skills on the JSS curriculum will help us to get a job if we are not able to continue after our JSS education''* (Suhum JSS 3 pupil).

> *''After JSS and you don't continue your education, you can learn dressmaking or hairdressing as you have already been disposed to pre-vocational skills''* (Sisala JSS 3 pupil).

However, some pupils also commented very adversely on the JSS and had their doubts on its implementation:

> *''When they take us to the workshop they just show us the tools and we don't make any use of them''* (Sisala JSS 3 pupil).

> *''Agricultural Science has no farm and basic tools. No tools for pre-vocational skills and no equipment for pre-technical skills. No home science equipment and materials in the workshop''* (Suhum JSS 3 pupil).

> *''We have a science lab but no equipment. We study agricultural science but no farm for practical. We do not have enough books for the library. A small library won't do us any good for such a large number of students in the school''* (Achimota JSS pupil).

Designed to be skills-oriented, the entire JSS concept hinges on successful training in the technical and vocational subjects. To make the youth more creative and production-oriented was evidently paramount and this needed to be backed up by much more serious resourcing, both qualitative and quantitative in terms of teacher quality, equipment and other materials. At the time of the survey, goodwill to the reform on the part of students was apparent in the case study locations.

Clearly, pupils in 13-15 age groups commented on aspects of school life that were important to them: some pupils' comments focused on academic aspects, such as the subjects they liked/disliked, whereas for others opportunities to participate in games and sports seemed a high priority. One Suhum JSS pupil seemed concerned that her efforts were unrecognised by her teachers, leading her to comment: 'Teachers don't give me commendations when I deserve them.' For another Achimota JSS pupil, the subject of school meals was an area of both celebration and frustration: having commented that the meals were better than at his primary school, he went on to complain: 'But the school keeps changing the size of our chips. I like thin *French fries* best.'

Leaving individual remarks aside, it is evident that the category that accounted for the highest number of comments from the JSS 3 pupils concerned positive comments about the JSS reform: far fewer negative comments were also made about the reform.

The other areas that attracted relatively high number of comments from the three groups were schoolwork, bullying and aspects of school liked best. Interestingly, rather more Achimota JSS pupils than Suhum JSS and Sisala JSS pupils referred to schoolwork and bullying; reasons for this are not clear. The finding with regard to bullying may give cause for concern. Whilst details of individual pupils' interpretations of what comprises bullying were

not available in this study, the fact that about ten percent of Achimota JSS pupils chose to make comments about bullying indicated that for some pupils it was a significant part of their school life (although it should be noted in this context that some of the comments were favourable ones, i.e. 'There is no bullying in my school'). However, it was likely that teachers could increase their efforts to monitor and reduce the incidence of bullying within schools. Much useful information, together with constructive suggestions, is included in Tattum and Herbert (1990).

In general, the pattern of pupils' responses when they were asked to give their own comments was encouraging: the positive remarks outnumbered the negative ones and suggested that, overall most pupils were contented in their school life.

The fact that most pupils perceive their experiences at school, and with their teachers, in a favourable light, despite the large number of developments and changes which have increased the pressure on teachers and pupils in recent years, will be reassuring for all those concerned with education in Ghana.

This chapter has been concerned with presenting the JSS reform in action at the classroom level. Having discussed particularly helpful analysis of these aspects, grounded in statistics and field observations, let us now turn to chapter seven, which presents the JSS innovation: perceptions and research findings.

Chapter 7

The JSS Innovation: Perceptions and Research Findings

General Perceptions

Towards the close of the first cycle of the JSS innovation, by the middle of 1999, a good deal of debate had been generated in Ghana - mostly informally - about its outcome and future prospects. Much of the evidence showed widespread confusion and anxiety about it at all subsystem levels.

The following poem by a JSS student at Achimota captures this sense of confusion and anxiety:

Education Guinea pigs
First, when I decided to enter primary school
They said they must have UPE
I didn't complain then but went boldly to school
They soon decided to abandon the UPE
Because ''the economy couldn't take it''
They didn't think what effect it might have on us
I still went through primary school
Despite their efforts
When I decided to go to secondary school
They brought 6-3-3-4
Again I boldly accepted the new system
Now there is a talk of scrapping it
Not again I say
I and my classmates are not and will not be
Education guinea-pigs
(By Abena Sackey, Achimota JSS)

Achimota JSS in Accra is one of the oldest and most elite of government schools in the country. Admission is highly competitive and students are normally destined for the universities. But it is apparent that even this prime and elite school is not immune to the controversy over what should be done. The lack of consensus between the Regional and the

National Government about the implementation of the JSS innovation has already been described. Thus while schools all around were involved in other things, Achimota JSS was obliged, as a government institution, to go on with their implementation, not without a considerable feeling of uncertainty among the students as encapsulated in the poem.

In September 1999 the researcher administered questionnaires to students in Eastern Region schools. Some of them after completing their questionnaires added extra comments of their own. One, for example, showed his anxiety over the impending examination and requested of the writer:

> *''I want you to give me the solution to this JSS exam. How to overcome it. Thanks.''*

Another respondent elsewhere added as follows:

> *''Please uncle, will you mind if I ask you a question. I hope you won't mind. This is the question – Where do the Government and people think we will work in, and with what, because there is no office that can accept any of us. Thanks.''*

Another student argued that:

> *''The former programme of Education should continue because if in this Examination we are going to take and let us say 88% of those who took the exam fails, where do you want to put these students? Do you want them to be miserable and start stealing and doing bad things like smuggling cocaine to the country?''*

Indeed, the students had an uncanny ability to represent the school/society interface in their thinking, a factor totally unexploited in the actual learning situation.

The anxieties of these students at local level were more specific to the end of the course examination outcome. Obviously these students lacked the self-confidence of the Achimota JSS student concerned more with the politics of the new system. The students at regional and local levels bring out more clearly the daunting problems of alternative options after JSS. One of these students, points out here the issues raised earlier in Chapter 6 by a school teacher about the difficulties of employment for those where the JSS might be their terminal educational point. Indeed the MOE partly admitted this problem in its report to the

JCC Reference Committee meeting in August 1990 when it regretted the non-availability of equipment to teach the Introductory Technology subjects:

> *''The non-arrival, up till now, of the said equipment, contrary to the promise made last year to that effect, has created many problems for both the Ministry and schools. There is thus the problem of what to do with many of the present final year JSS students who have not had any instruction in Introductory Technology for lack of the necessary workshops and equipment. It would be unrealistic to expect such students, who cannot go into senior secondary schools, to go into the labour markets unprepared as they are. Perhaps consideration may be given to allowing such students to repeat the third form of JSS if they so desire.''*

It was a similar consideration which prompted the then Chief Registrar to recommend, to the PNDC Secretary of Education that the weighting for the final JSS examination should be reversed for this first group of students since they had neither the equipment, the guidance, nor the qualified teachers to prepare them so as to make continuous assessment possible. But in spite of this, the examination was undertaken as originally planned. Reactions to this were captured in newspaper headlines:

- *''Pioneer Students ill-equipped'',*
- *''6-3-3-4: A new Scheme in Disarray'',*
- *''A New System and a New Crisis'',*
- *''Parents want 6-3-3-4 System Suspended''.*

In January 1990 the Ghanaian Times Newspaper carried out a nationwide survey of the new system in operation which was serialised between January 29th to the 30th 1990. Excerpts from the report are instructive:

> *"Has it started yet?" Emelia Akufo, principal Koforidua Girls school, retorts when asked how far her school has gone with the implementation of the 6-3-3-4 education system; why I am asking if the programme has started is that I took over a confusion of shuffling children up and down. If it has taken off, I think we have actually made a slip somewhere. We have overlooked a vital aspect of the programme".*

In the Central Region the system took off in 1987 but has been facing similar problems as in other regions. The paper reported thus:

> *"Regional Commissioner Colonel Baidoo had explained that 'Central Region hopes to run the new policy side by side with the old system in order to not rock the boat'. Baidoo says the maturing period of the new scheme may not come until ten years. The General Certificate of Education according to him should not just be hushed aside. 'It took us some time to get to this stage of the existing system. I would wish us not to be in haste for to put aside the old one is to break everything up. I am appealing to the National Government to keep the old system even eternally', he contends."*

In the Eastern Region, the report continues:

> *"... beyond the expected averment of Regional Education Officials that the programme has been very successful, there is hardly nothing to testify that the programme has been around for the past three years."*

The survey discovered acute lack of resources in materials, equipment and teachers and concludes:

> *"In the face of these daunting inadequacies, it is doubtful if the first batch of JSS graduates in the Eastern Region current secondary school system have any knowledge of basic technology, after three years of experimentation in the 6-3-3-4 system of education."*

Soon after the JSS examinations in July 1990 a parent had cried out against the injustice of the 6-3-3-4 system. He pointed out in an article to Ghanaian Times of 10th July 1990 that while the cleverer students in the Government Schools were compelled to implement the 6-3-3-4 system, their counterparts in the Regional schools are allowed to continue with the 5-year course. Indeed, this protest first lodged from Koforidua has since been taken up by the PTA of New Juaben School in Eastern Region as was reported in the Ghanaian Times of 9th June 1990. The crux of the protest sent to the Minister of Education is that:

> *"The parents thought that their wards would lag behind others schooling in regions where the 6-3-3-4 did not start by 1987, and who would take next years examinations and secure admission into higher institutions thereafter."*

Outlining the stark consequences of the situation the parents concluded:

> *"In 1990 when the pupils (the first batch of the JSS scheme) would be in the sixth form (final year of the senior secondary school) they would only take JAMB examination with their juniors in Regional schools and obtain the senior secondary school certificate examination which is neither 'O' or 'A' level value*

> *arising from the above, where in the universities are they to be placed? In the first of the four year system? Behind their contemporaries who had secured admission from form 5 in 1992? Certainly not in the second year meant for advanced level candidates."*

The issue raised in this PTA letter appears to be the most daunting of the fall-out effects from the JSS innovation and represents the problem of duality (Braimah et al, 2014) in the system which invariably poses a threat to vocationalisation though the issue here is not of content but of structure. In general the points that emerge from these opinions reported here can be summarised as problems of:

- structural duality in the system;
- communication gaps;
- insufficient/lack of implementation;
- inadequate provision of resources i.e. materials, equipment, funds and teachers;
- validity/acceptance of the examination in the face of inadequate preparation;
- level of prevocational training *vis a vis* employment opportunities.

The researcher's and others' findings, however, reveal several other problems in addition to these. In the next section these issues will be interpreted within the clusters of evaluation model, the IAC system factors.

The CDC: Conceptual Evolution

The Modern Aids to Education Centre (MAEC) 1974-1986

An educational innovation project was started in the Central Region Ghana with financial and personnel aid from the USAID. It was intended to improve the quality of education through the use of a variety of audio-visual aids (AVA) including modern media hence the name Modern Aids to Education Centre. The USAID left in 1972 during the military coup and never came back. From 1974 the MOE had to assume full responsibility for the Centre.

By this time it was obvious that the innovation had problems of credibility and acceptance. Credibility because the kind of equipment that was identified with the Centre was seen to be beyond the meagre means of the schools and therefore could never be attained; and acceptance because the American project personnel were seen as strangers who remained aloof from the main body of the Ministry, working in isolation in this purpose-built complex. The innovation never reached the stage of full institutionalisation. Those USAID change agents would have found Havelock's (1973) guidelines most useful.

The Centre was made up of the following seven units: Schools broadcasting, audio-visual aids, printing, film/photography, prototype design, and maintenance units with an administrative support unit. Each of these units worked primarily on separate projects though broadcasting would use facilities in the other units for the production of broadcast support materials. The staffing was a mixture of Ghanaians with American experts. Some MOE Inspectors, a Senior Inspector, and therefore still very far from the management cadre in the MOE hierarchy, were deployed at the Centre. The majority of staff were the junior ones in the technical/vocational units employed as artists, technicians, craftsmen and workshop attendants and also administrative support staff. All the Inspectors were in the broadcasting unit assigned to the production of programmes in different subject areas. The American experts headed and controlled all units, initiating and directing activities except in administration which was under the Senior Inspector. The expatriates of course had direct access to the highest decision-making authority in the Ministry of Education and were in no way subject to the administrative controls at the MAEC. The image of total stranger created by the USAID remained with the MAEC long afterwards and it never succeeded in casting it off. The Centre was never integrated into the education system, nor did it achieve an internal cohesion in its

activities. It was these problems of acceptance and integration which formed the rationale for the search for change.

By 1986 there was a merger of the two units. By the end of the year estimates for 1986 were being prepared by the Ministry to include provision for what was called the Centre for Curriculum and Educational Aids Development (CCEAD). The merger had meant that the MAEC had expanded its activities to include tasks previously done by the Officer in the Curriculum Unit.

The CDC: New Concept 1986 –

In a dramatic budgetary manoeuvre the Curriculum Development Centre (CDC) became a fait accompli towards the end of 1986. The estimates for the following year, 1987 were already prepared and were to be defended by the MOE representatives before the Director of Budget. It was discovered that estimates for the new CCEAD had been wrongly presented particularly with regard to staffing. It would seem that a deliberate attempt had been made to dismantle the CCEAD structure, starting with the transfer of all senior staff of the Centre to MOE headquarters according to the proposed estimate. When this action was challenged the Director General GES stated that it was for better management of staff. One actually answered: "We do not want to create too many mini-empires in the Ministry", and went on to cite the Special Education Unit as one of those fighting to have their own empires. So they had decided to discourage such aspirations.

This indeed is a classic example of ruthless exercise of authority to suppress what is considered a threat to both professional and bureaucratic authority of the upper hierarchy of the Ministry Directors. Both the Special Education Unit and the CCEAD are specialised units that derive their powers from 'expert' authority. If the expertise was given scope to grow into autonomous 'empires' then the 'experts' in those units would acquire extra powers derived

from the new bureaucratic structure in which the units would have been given an enhanced status. Both units at the time were under the Teacher Training Division. In the new arrangement they would both have been independent of that division. This was what the Directors had wanted to fight. The fear of the imagined 'mini-empires' had meant that the Directors had failed to rationally analyse the proposals they were about to submit for consideration. In effect there was no demonstration of any understanding of the concepts of the Centre for which they were budgeting.

Havelock (1973, p.10) points out that "It is much harder to work from below and to bring about change when you do not have formal power, but it can be done". What he did not specify but implied is that various strategies including subversive methods, could be employed to counter the oppressive bureaucratic authority. One such method was to find a means of side-tracking the 'normal' communication channel in order to gain access to the crucial decision-making authority thus frustrating the will of the oligarchy. This was the experience of the CDC.

This historical analysis of the development of the CDC demonstrates the low level of infrastructural factor available in the system not only in general terms with regard to conceptualising and setting out the relevant structures for an innovation/curriculum management organ, but in more specific terms, in the lack of awareness for the vital role the CDC in direct relation to the ongoing JSS innovation. The top hierarchy of the professionals had failed to see the relevance of the CDC in the innovation which they all had been concerned about. In the next sections I shall present operational evidence on the structure, resources and activities of the CDC to see how appropriate these are in relation to the behavioural change requirements of the JSS innovation as well as for the general needs of a

special sub-system. Issues that may emerge from the analysis it is hoped would provide useful lessons to similar centres elsewhere.

Operationalisation of the CDC

The CDC Structure

The old MAEC structure was retained with the hope that it would be redirected to new functions. The intention was that as expertise and resources were built up the orientation and function of the old units would be gradually altered according to what was feasible at the level of available competencies to reflect the new principles and thrust of the CDC. The Schools Broadcasting Unit for example was going to form the nucleus of the curriculum research, evaluation and in-service training units since that is the only unit in the Centre with qualified and experienced Inspectors specialised in various subject areas and therefore had potential to be retrained and redeployed. The other units were staffed with artisans, craftsmen and technicians with no training in educational pedagogy.

One major problem in establishing a structure for the CDC lies with the status factor. Several times in this study it has been shown that problems have arisen out of structural inadequacies. This was true of the structural arrangements for the CA and G and C innovation components. It is also true of the CDC. For because of the low status of the CDC and the leadership in the Ministry hierarchy it became difficult to see the Centre in dimensions adequate to its function. Handy (1976, p. 201) had pointed out three pre-requisites for success for an organisation whose goals are geared to integration/co-ordination such as the CDC has to do. These include:

(i) position power and appropriate status for the leadership so that the job is seen to be important by the top management;
(ii) expert power and experience; and
(iii) inter-personal skills necessary to resolve conflict situations.

The CDC leadership could be seen to possess appropriate levels of the last two conditions but what has made the most important difference to the Centre is the lack of hierarchical power and status necessary to secure for it acceptance by the top management. The main structural problem of the CDC therefore seemed to be that of personality: the programme became personalised and identified with the originator of the idea and seemed unable to rise above that identity.

Indeed, the degree of personalisation is made obvious by the fact that during my interviews in January 2015 with officers of the Ministry, including the Director General GES (who became Minister of Education) and the former Permanent Secretary in the Ministry between 1984 -1988, each one had admitted that the structure of the CDC had been wrong. The Director General had said:

> "*The CDC should be upgraded. The quality of education can depend on the CDC. EDC measures the effectiveness of learning in schools while the CDC is responsible for producing the right quality of children in the State schools. The Ministry is very much disposed to upgrading the Centre*."

The Director General on his part had admitted that "The CDC has been misconceived at policy making level. But it should be restructured as soon as possible" And the former Permanent Secretary proposed that "the CDC should be organised on similar lines to the EDC in order to provide valid material for tests set by the EDC".

It should be emphasised that each one of these officials had, during the interviews, outlined the functions for the CDC as they had been submitted to the Estimates Committee in 1986 which were in agreement with all the rational concepts of a CDC. Thus they had all in fact been aware of the role and potential of the Centre.

Without the structural support, the activities became opportunistic, on a piece-meal basis, lacking the co-ordination and cohesion that should have formed the basis of its operations. Both in terms of the general requirements of the CDC as a special organ and in

terms of the specific demands of the JSS innovation, the Centre lacked the structural support to bring about an adequate level of system completion.

The Director (Science and Technology) GES provided a typical reaction to the CDC when asked in October 1999 whether he thought there was a role for the Centre to play in the innovation. He answered:

> "*The function is relevant. The CDC has not really been involved, though under this discussion it is clear it should have been. For example in printing books and materials, woodwork and electronics. Dialogue is necessary to involve them*."
> (emphasis mine)

The Director had seen the functions of the Centre to extend specifically to such areas as trialling and collating results for further use. The CDC could be involved in collating reports collaborating with the EDC in rationalising situation in the regions.

I A and C Factors at National Level under Military Leadership

The Military essentially operates a role culture to the extent that its internal organisation is based on a rational division of labour principle (horizontally and vertically) as is characteristic of a role culture. The subordinates therefore carry out the orders of a superior, i.e. performing their specific roles/jobs and in so doing carry the authority of the whole military force behind them as obtains in any bureaucracy.

In the Ghanaian context, where under abnormal and crises circumstances the military found themselves assuming functions outside the normal boundaries of responsibilities of the military sub-system, they found it necessary to apply a different culture to the task of running a civilian government. As I have discussed earlier, under such an innovative and crisis situation they came to rely more and more on power culture in their dealings with civilians, appointing their own satellite power centres at strategic positions to enable them maintain control of the system. This effectively curbed the dissonances that had characterised the civilian democracy. Thus the military operated two cultures: role for its internal military

organisation and power for dealing with political, civilian government management. It will be seen how far the leadership cultures and authority of the military have been brought to bear on different activities of the JSS innovation.

It is on record that the new policy on education, with the educational innovation it gave birth to, owes its existence to the persistent support of military leadership in control of government in its gestation years 1982 and 1986 when the policy was conceptualised. It is remarkable that at the height of the military coup the Military Government was still able to approve that a national conference should be organised to seek solutions to the country's educational problems. This support is certainly an indication of the priority education enjoyed under the Military regime at the time. It was also under the same regime that planning for the new education system for the country was elaborated, a procedure which reflected the special position education held at a time when government could assure the people that "money was no problem". Thus the NPE made provision not only for a massive expansion of the educational system but introduced several radical and complex innovation elements to be embarked upon all at once.

Having initiated the change the Military also set in motion procedures for the implementation by providing relevant support to facilitate the processes of change. Apart from providing for the conferences and committees for the formulation and writing of policy document, the Military Government also in 1986 appointed a special body, the implementation Committee, to work out guidelines for the implementation of the provisions of the new policy as well as serve as a monitoring mechanism in the education system. Professionals were encouraged to perform. In the words of Dr Sawyer, who has been so critical of the implementation of the new JSS system, as he addressed a National Conference at the University of Ghana, Legon, in July 1990:

> "*Credit goes to the present military government for coming out categorically that it is supporting the new policy in words and action. Even the previous military government made some courageous attempts …*"

an opinion confirmed by the Director of planning MOE who acknowledged during my interview in 2015 with him that the military regimes listen more to professionals than the politicians. By applying coercive legalistic and resource powers it provided patronage and made it possible for necessary activities of this problem-solving phase to be completed. There had been a proposal for example for the new education bill to be tabled at the National Assembly in 1987 by the then Commissioner for Education during the civilian government. Such a decisive exercise of authority by means of legal power provides the essential 'energy and direction' so critical to the implementation of the innovation. This would ensure that all regions now seriously embark on implementation rather than adopting the recalcitrant attitude that had postponed adoption apparently indefinitely.

Also in 1990 the Military Government had made a firm commitment by actually placing orders for 50 million *Cedis* worth of pre-vocational equipment with the various foreign companies. Subsequently an order had been issued from Government House in Accra to all Regional Commissioners directing that no equipment should be left lying outside in the open air after it had been supplied. Therefore every Regional Commissioner had to ensure that workshops were provided to house the equipment on arrival. In this case the military leadership has resorted to the use of role culture operative within the internal military organisation to ensure compliance of subordinate officers with the directives.

The Military may seem not to be directly involved in the innovation activities but they certainly seem ready to use their authority to secure relevant influences where and when they are most needed. Most persons interviewed in this research testified that Military Government had been most supportive of the innovation, not so much by words but by deeds in providing

the necessary power base for other actors in the system to carry on with the innovation process. The Director General GES in January 2000, for example, was certain that more progress had been made in implementing the innovation since the Military returned, for the 'civilians were not as committed and appreciative as the Military'. The former Permanent Secretary MOE during the initial years of the JSS innovation was convinced that government policy was better focused and consistent under the Military which made it possible for things to move faster.

This authority was however constrained by inadequate resource base in the form of equipment, materials, staff and funds. The resource deficiency lowered the impact and effectiveness of Military influence on the innovation. For example, although the equipment was ordered by the middle of 1989 in anticipation that it would have been in use by December of that year, it was only towards the end of 1990 that it started to arrive. By January 1991 only a few schools in the Eastern Region had received some of the new tools according to the Director General GES. The evidence seems to show that what will eventually be available may not match the level of demand.

According to the Commissioner for Education in 2000, "much blame for lack of progress could be placed on inadequate funds". Money indeed seems to be the critical variable in determining how much progress is possible. Money has become the most important resource power that can confer validity on any decision-making authority including the military. For, when one and a half years after the equipment was supposed to have been ordered and communities have been directed to provide workshops, there was still no equipment supplied, doubts about the ability of even the Military to make such provision began to be expressed. By January 1991, communities were lobbying at the MOE Accra, for allocations of equipment for their ready workshops. An account is given by the Ghanaian

Times newspaper of the 30th January 1991 of similar situation in Cape Coast, Central Region, where they received 10 sets of equipment in October 1990 for distribution to 50 schools in the Region. Again, as has been previously shown, the inadequacy of communication was partly due to insufficient financial provision which made it impossible to organise awareness-creating activities to facilitate information flow about the different innovation elements. Since 1989 there has been no evidence of any improvement in that direction.

Money certainly has become a major problem for any government leadership in Ghana unlike in the early 1980s when the educational innovation was conceived. Insufficient supply of funds has now significantly reduced the level of influence and effectiveness of the innovation process under an otherwise supportive military authority. Thus in spite of the commitment of the military leadership, without appropriate resource base to legitimise it, here is an authority that is unable to meet the level of support required by the innovation: an A-configuration for the Military Government leadership. Consensus has been rather elusive factor under the military. On one hand corroborative evidence already presented shows approval of the military actions contrary to Etzioni's argument that coercive power tends to generate a tendency towards alienation among organisation members. On the other hand, because of inadequate resources to back up military intentions it becomes difficult to mobilise the level of consensus required for meaningful implementation.

Under Civilian Political Leadership 1992

Power Structure under the Civilian Government

I had established the political context within which the educational innovation had been introduced. The remarkable features of this political arrangement which bear important significance for analysis here are as follows:

(a) it was an innovation, with EL+ BC+ configuration for it was large in scope and had complex behaviour implications. After independence in 1957 a British style parliamentary

government had been practised before the Military took over government in February 1966. The 1991 American style of government therefore involved a big shift in perception, attitude and practice, particularly after many years of coercive military control;

(b) it was an exceedingly expensive form of political arrangement to maintain the size of each level of government;

(c) the most important resource base was under central control of the National Government i.e. both economic and physical coercive powers rested with the National Government. And at this time, it should be remembered that the Ghanaian economy depended almost 99% on export products - cocoa and gold;

(d) resource power became such a potential force for exerting influence at both Regional and National levels that its capacity for coercion nearly exceeded military force. Resource allocation, as Etzioni (1961) pointed out, became the main central control mechanism in order to enforce compliance. Regions with recalcitrant political parties in charge, could be denied certain vital resources by the central government. Similarly at Regional level intransigent constituencies or individuals were blatantly discriminated against in the 'sharing of spoils' by the Regional governments. Patronage thus became the most assured means of mobility, economically and socially;

(e) under the circumstances security of tenure of office, especially in the public service, was openly violated. The authority of bureaucracy became considerably eroded. The organisational style, in spite of still maintaining the structures of bureaucracy shifted perceptibly from role to power culture.

What implications have all these characteristics of the political innovation for the educational change? To gain a vital insight into the relationship between the political and educational innovations one should recall Handy's view that resource power often has unsavoury results as it is not always popular with people since they do not like to be reminded that they can be bought. This fact tends to provoke negative influences in the actors on whom power is being exercised; i.e. dissonances tending to lack of consensus.

This was the case in Ghanaian political scene between 1982 and 1991. The focus of all energy at all political sub-system levels became the struggle to acquire part of the resources. The national Government under the PNDC struggled to maintain its monopoly of control over resources while the opposition parties in the regions tried relentlessly to wrench that control away from it. This battle became the all-consuming priority with all politicians and every

issue, including educational innovation, was subject to consideration from this perspective. The negative power thus generated meant general lack of consensus between the Regions and the National Government on practically every subject, education not excluded.

From 1987 revenue from cocoa and gold had decreased very sharply creating a gap that threatened the power base of the national government particularly in the crucial years just before the general elections. The acute economic strains thus rendered the authority of the NDC party invalid since its power base had been consequently eroded and aggravated the negative power already existing in the system by creating distortions in all matters and very low levels of consensus, a C-. in effect. It is hoped that this brief analysis of the political situation will facilitate understanding of evidence to be presented regarding the role of the civilian government in the implementation of the educational innovation.

The Civilian Government and Innovation Implementation: 1992

The conceptualisation of the educational innovation took place long before the civilians came to power in 1992. They therefore were in no position to have exercised any influence on the thinking and ideas that went into the formulation. I shall therefore concentrate on evidence of implementation.

A good reference point for this presentation is perhaps Professor Anfom's analysis of the problems of implementation of the new education policy. In July 1990 at the completion of the first cycle of the JSS system during the workshop he identified three major requirements that were lacking in implementation attempt as (a) the will to succeed; (b) supervisory skill, and (c) maintenance skill. Requirement (a) is directly linked to various levels at authority support. Analysing the role of the civilian government he had lamented the fact:

> "*Perhaps the most unfortunate aspect which retarded the progress of the new policy was the civilian government's indecision on one hand and the appalling lack of public enlightenment programmes... the civilian government concerned itself with white elephant projects that would generate 10% to 20% kick-backs and*

> *kick-forwards! … To make Ghana a disciplined and development orientated nation, our leaders in various walks of life must first and foremost be resolutely committed to the goal, not only in words but in actions, with the accent on action*."

Professor Anfom had in fact maintained a relentless campaign to get a positive involvement of government authority with the innovation since it was introduced. As early as September 1987, within the first two weeks of the innovation he had in a newspaper interview (Daily Graphic, 26th September 1987) accused the government of impeding smooth takeoff of the new secondary system. He had reportedly alleged that:

> "*Rawlings should have explained the policy and launched it himself. As Head of State, the President must put his personality behind the policy …*"

What Anfom is advocating here is the application of innovation strategy identified in literature as power strategies involving political, legalistic, administrative authorities (Benne and Chin, 1969; Havelock and Huberman, 1977; Kingdon et al, 2014; Baird et al, 2016). The civilian authorities at National level could not demonstrate decisive and effective political and legal support for the innovation so that over three years after it was introduced the starting date was still an issue for debate.

Furthermore, the National authority failed to identify itself with the innovation by effectively communicating information about its position to the people. The mass media could have been exploited to advantage to create the appropriate level of awareness for the innovation. Data presented in earlier chapters have revealed gross inadequacy in communication but our earlier analysis has seemed to put all the blame on planners. Here it seems the central authority is equally to blame for they had in fact completely neglected to make communication a priority in the implementation plans just as experts and bureaucrats had been shown to do. Thus Regions could claim (even if mischievously) that they had been kept in the dark. It is ironic for instance that political parties were ready to spend enormous

amounts on advertising and campaigning for political acceptance but never occurred to them that a similar strategy was applicable to the educational innovation.

The most serious of the problem areas was of course funding on which depended other resource provisions. It has been in the constitution that education is in the 'concurrent list' which means full participation by National, Regional and Local governments in educational provisions. The civilian National government had proceeded to absolve itself of responsibility for the secondary school innovation on the basis that Regions were responsible for providing for their schools. The Regions had however argued that the enormous financial implications of the innovation were far beyond their means, stressing particularly the disparity in wealth between Regions, and insisting that since the National government controlled the purse string it should assume responsibility for funding the innovation. The acrimony generated by the funding arrangement was the basis of practically all the communication about the new education system among the politicians during the civilian regime as was enthusiastically reported by the media. Inadequate budgeting capability of course contributed to the discord as demonstrated in chapter 6, but the wrangle revolved around the legitimacy of Central Government to control so much resource power, and would seem to explain the incredible estimates submitted by Regional Governments: Dr Ekaw Spio-Garbrah described as an 'auction sale'.

Inevitably this led to lack of consensus, a C-, in every other aspect of the innovation in relation to the exercise of authority. When the Minister of Education was reported to have involved the attorney-general in the preparation of an education bill he was promptly threatened with a court action by politicians from other parties. In the Eastern Region the Chairman of the Education Committee promised to challenge Central Government's decision to make the policy binding. He was reported by the Ghanaian Times of 14th November 1987 to

have indicated his willingness to withdraw his objections only if a bill were "prepared to help the Regional Governments. The National Government's help", he said, "would include provision of infrastructure and equipment in the junior secondary, training of technical teachers, as well as the provision of special grants to the Regions for the payment of salaries". It should be mentioned that the level and indeed the actual payment of teachers' salaries had been a perennial source of problem during this civilian era and was not directly a problem of the JSS innovation.

Other Regional Commissioners called for postponement because of inadequate funding to support implementation. The Western Regional Commissioner for example was reported to be willing to implement only if the "National Government should provide the fund to build laboratories and provide teachers", (Ghanaian Times, 27th September 1987). There were other suggestions, (Daily Graphic, 20th September 1987) to make the new system optional.

From available evidence the necessary mechanism of control in the form of a reliable and decisive authority that can give energy and direction, to the innovation by ensuring that "people will perform in conformity with the plan..", is shown to be inadequate. The civilian government leadership at National level had been unable to exert any influence whatever on the Regional governments because it had been unwilling or unable to share resource power with the Regions and this had been considered illegitimate and had generated dysfunctional reactions in the system leading the whole system to regress to C-. Clearly the civilian political authority configuration with regard to the innovation stands at A-.

Before I go on to consider other levels of authority it is pertinent to draw attention to an issue raised by Dr Sawyer in his address in Accra in 1990. This is in relation to public enlightenment on the innovation. He had said, "As is characteristic of Ghanaians, everything is secret and confidential…". This characteristic has in fact affected the type of evidence I was

able to muster to aid analysis of authority support of government political leadership for this innovation. It was difficult to obtain documentary evidence of decisions and actions at that sub-system level. Many of what was available cannot, for confidential reasons, be reproduced here. I have therefore had to rely heavily on evidence from newspapers which give a fair idea of what is happening but these have been supported with corroborative evidence from other sources. It is hoped that further insight might be obtained when evidence from other systems level are presented and might be considered in relation to the level of authority that had been available.

Bureaucratic Authority at the National Level

Usually in a bureaucracy, professionals, in spite of their expertise power, are subordinate to the administrative leadership though they can still wield considerable influence on the basis of their expertise (Kingdon et al, 2014). For the purpose of this study, there is hardly evidence to suppose that administration was able to exercise much authority concerning the innovation. It would appear that much of the decisions were clustered around the political decision-makers and various groups of professionals in the system. The politicians tended to assume executive rather than advisory/supervisory roles thus in effect usurping without any qualms the authority and important decision-making functions normally retained by the administrative leadership. A fact which would seem to explain why the administration at National level, has hardly been involved in matters concerning the innovation.

Initiative and power have rather been exercised by the political leadership and various professional elements in the system among whom are:- the Implementation Committee- the National Council on Education (NCE)- the Joint Consultative Committee on Education (JCC), and JCC Reference Committee, the professional divisions and specialist organs of the MOE. I

have dealt with the political leadership and will now turn to the various professional elements starting with the NCE and JCC.

The NCE, JCC and the JCC Reference Committees

The NCE is the highest decision-making body on education outside the Executive Council. It consists of representatives from all regional GES and Ministry of Education including the Minister of Education, the Permanent Secretary and Co-ordinator of Education from the MOE, Commissioners, Permanent Secretaries and Coordinating Director from Regional GES. The body meets twice or three times usually to deliberate, take decisions and recommend on matters referred to it by the JCC for government action. The JCC on the other hand is the meeting of Heads of key Divisions of Regional GES with their counterparts at National level. Their deliberations are guided by recommendations of the JCC Reference Committees of professionals in the divisions. They pass up their decisions to the NCE for approval and further direction. Special organs in the education system are also represented in the two bodies and these special organs include the Implementation Committee and the GERC. The most important feature of both the NCE and JCC and the JCC Reference Committee is their country-wide representation – all Regional Ministries of Education are fully represented in these organs of highest decision-making authority on education in the country.

Regional governments could therefore not justifiably claim of ignorance about the innovation or even quibble about the cost when their agents had fully participated in deciding and planning the innovation activities. When, for example during the 2014-2015 fieldwork, I asked the former Regional Director GES in the Eastern Region between 1986 -1991 to explain his role in the educational innovation he said, inter alia:

> *"My role was played within a group in the decision-making body, the NCE, which is the highest decision-making body on education in the country. We prepared position papers to promote and adopt the new system."*
>
> (Interview, January 2015)

With such close involvement of Regions in important national issues on education, how could Regions claim ignorance? Indeed the idea for the new policy had first been hatched at a JCC meeting in 1985 and had subsequently been developed and followed up as the current innovation. Any Region that opts out therefore has other reasons which do not include ignorance.

The proceedings of these national educational bodies are not however binding except by a political authority buttressed with legal power. The NCE, JCC and JCC Reference Committee decisions and recommendations jointly drawn up at national level – will need to be presented in the context of individual Regional Government's priorities and compete for allocation with such other concerns of the Regions. If, as in Accra, the Government was more intent on pursuing its own policy of free educational access at all levels, and in the Eastern Region the priority was for a Regional University, then the MOE representatives in the NCE and JCC would require a different power leverage to persuade their governments to a more favourable consideration for the JSS innovation. Here one finds that even at the highest level of professional decision-making authority in the Ministry, without the relevant power support the effect is negligible. It also means that even among satellite power points of government leadership (i.e. Ministers and Commissioners as members of the NCE), there is also competition for resource power and influence, because the JCC and NCE organs will need to compete for government support with similar bodies in other Ministries in the Region.

There are some effective strategies with which to compete and win I shall come upon the evidence later. The point here is that the highest bureaucratic and professional decision-making authorities at the MOE level in fact possess insufficient level of authority to support

the innovation. They have therefore been entirely unable to stop any negative influences or consequences that have emerged in the course of implementation even though they might have known what ought to be done.

Professionals at the National Sub-System

These include the Implementation Committee, such specialist bodies as the GERC and CESAC and all the Divisions of the MOE. I shall try to determine the degree of relevant authority these experts are able to exert over the innovation within their various boundaries of responsibility.

Implementation Committee: The task specifications of the Implementation Committee (Blueprint, 1985) are similar to those identified in page 295 as belonging to the innovation manager/evaluator/linkage expert: in effect the Implementation Committee was set up to serve the purpose of a 'temporary specialist subsystem' to manage the innovation specifically. It would be logically implicit that actors in the Committee would possess similar competencies and expertise in innovation management, curriculum development and evaluation as are required of actors in such 'specialist subsystems' together with the authority which should logically, attach to such expertise. From the composition of members of the Committee in which planners seem to be heavily represented (MOE Planning Division and UNESCO Planning Team) it would seem that emphasis in expertise and skills lie more in the direction of planning than in innovation management etc. Of course such capabilities are most relevant but these should be additional to the essential skills in innovation management.

There seems a logical link between this inappropriate level of relevant expertise in innovation management and the inefficient co-ordination of communication and vital linkages that have characterised the process of the innovation throughout its various phases. It will be unnecessary to repeat the catalogue of system fragmentation that abound in all innovation

components. But this I- capability in coordination and monitoring in fact has tended to reduce whatever authority and influence the Committee may be expecting to exert on its clients since its contact with the rest of the education system has been too negligible to permit such desirable level of influence to be exerted. At the National Inspectorate Office in Koforidua, for example, there was certainly no awareness of the importance or authority of the Committee.

It is necessary also for the Committee to be seen to possess appropriate expertise power supported by resources and personal powers in order to command any authority. Relevant resources would include adequate number of staff and funds primarily. In reality I find that the Committee is not supported by such a proper power base. For example, because it is not within the MOE structure it has no direct influence on either the MOE or the Regional MOE's: it cannot therefore force the various MOE's to adopt its recommendations. Its expertise in other areas such as budgeting has often been seriously in doubt. Thus without the essential expertise power the Committee is unable to operate efficiently within a task culture from which its powers should have been derived. Instead the body gets drawn into the power web serving political goals not necessarily in consonance with the priorities of the innovation. This failure of the Committee to provide the necessary leadership through conceptualisation, and implementation phases of the innovation resulted in undesirable reactions and dissonances. As evidence has amply demonstrated, major identified gaps arise from insufficient information and interaction among system members with the proposed innovation. Thus the A- leadership support of the Committee tended to induce a C- level of consensus as subsystem members attempted to interpret and implement the innovation without adequate support from the Committee.

The GERC and CESAC

The Ghanaian Educational Research Council (GERC) as its name implies, was established specifically for research and improvement of education including curriculum development. The Council's work came to the limelight with the organisation of the national curriculum conference of 1973 and the subsequent formulation of a national policy on education. It is also known for its curriculum development activities at the primary and teacher training levels. The GERC is an organ of the MOE with comparable status with any of its divisions and subject to the same administrative culture that operates within the system. The Comparative Education Studies and Adaptation Centre (CESAC) on the other hand, is based in the University of Cape Coast and is in a consultant's relationship with the MOE. It is involved inter alia with the development of curriculum materials at secondary school level. Materials from these two bodies are for nation-wide use.

Understandably there is keen rivalry between these two organs over resource sharing as both have had relative successes in their areas of responsibilities. This is not to overlook certain inadequacies that have already been highlighted in the course of this data presentation. The lateness in the provision of materials and lack of trialling and sufficient awareness creation activities about all aspects of the innovation have been discussed in the earlier chapters. What is of significance at this stage is the obvious duplication of effort in the two bodies as well as in the body of the Implementation Committee with regard to the JSS innovation.

The main operational style of both GERC and CESAC is in Handy's terms through task culture, i.e. through coordination and linkages based on task-force approach using teams of experts assigned to specific projects. Thus each curriculum material produced by either body has been worked on by panels co-ordinated by the sponsoring body. This means that either of

the organs can effectively carry on the coordination functions of the other. However, whereas the GERC had been specially set up to serve this coordination purpose as well as the wider purpose of curriculum development, research and evaluation with all the support facilities provided, CESAC on its part, is subject to the constraints of a department in the University.

Summary of findings

It has not been easy to make an objective assessment of the achievement of the CDC but it has been useful to subject its operations to the analytical model of this research and the findings are instructive. The infrastructural capability of the Centre, in spite of all the good intentions, is definitely as yet at a very low level of development. The following gaps have been observed:

(i)***Inadequate Organisational Structure***

As was argued elsewhere in this study, without sufficient input of A factor support, an I+ configuration often becomes reduced to an I-. This was demonstrated in the case of G and C innovation at Ministry level where the head of the unit was rendered ineffectual in spite of his expertise under the organisational structure to which the unit is subjected. This was also found at GES where in 1990 the guidance counsellor could not function under a leadership that had lost its bearing and authority. The CDC has so far suffered from the same inadequate organisational structure which has denied it the relevant authority to be able to release its full professional potentials.

Another dimension of the structural problem is that a radical re-organisation is necessary in order to release the Centre from the ‘personality culture’ (Handy, 1976) to which it has been subject. There is a need for proper study to be made to determine what should be a suitable structure to enable the Centre to perform effectively bearing in mind its role as innovation facilitator, researcher, evaluator, curriculum designer and developer with the

behaviour requirements implicit in these roles. Such a structure that is to be evolved must be seen in terms of this 'specialist sub-system' and must not be in terms of the individuals employed to work there and what in their official status they are expected to do. In this way, functions, roles and responsibilities, would then be properly and objectively specified.

(ii)***Inadequate Staffing***

Meanwhile, a drastic input of adequately trained manpower is necessary to increase the quality and scope of work already being done. Without this, the essential co-ordination and integration that is required cannot be achieved since the staff will continue to select only those tasks that are administratively feasible for them to carry out. This would make cohesion difficult to attain as a problem-solving strategy.

(iii)Insufficient Implementation

Its scope in engaging in curriculum development and innovation activities has been very limited. Although evaluation is in-built in the procedures of the CDC it has been impossible for this to have been carried out effectively with regard to its own work. Its activities in the primary school improvement programme, educational broadcasts and lecture series had of course been designed to satisfy the needs of the clients as identified from the monitoring and evaluation of enquiries that had come through to the centre and from observations from visits to schools actually undertaken before the UNICEF project took off. But its role had required to be engaged directly with the on-going innovation in all its complexities and this has not been possible.

The evidence has shown that so far the capability available to the Centre in general and relative to the JSS innovation specifically, is only at an I- level showing a wide gap between what is needed to achieve the level of system completion planned and what actually exists.

Discussion of Research Findings

Concluding the discussion of the evidence in this thesis requires that the writer recalls the original propositions guiding the study and the related research questions posed in chapter 4. These propositions were formulated around three systemic factors, which are supposed to advance an innovation process to the appropriate level of completion. These factors are: infrastructural/problem-solving capability; authority; and consensus influences. Evidence of each of these factors will be interpreted in relation to the extent to which it has illuminated the research questions. For ease of organisation the format so far used in data presentation will largely be retained; thus the discussion will cover the three infrastructural issues of conceptualisation, implementation and evaluation, and subsequently deal with authority and consensus findings.

Evaluation of Infrastructural Findings

Conceptualisation

The relevant research question here asks, "How far does the system appear to have accurately identified its problems and specified reasonable solutions to them?" This is broadly a question of how logically and appropriately the rationale and objectives of the innovation have been determined. Each innovation element has its specific concerns. Thus for the vocationalised curriculum the question touches on such matters as:

-adequate analysis of educational values and needs; effective assessment of socio-economic realities; sufficient understanding of the school/employment interface;

a realistic mapping of post-JSS options;

a clear grasp of the differences and implications in terms of academic, resource and pedagogy of vocational and pre-vocational training;

a clear understanding of the concept of an integrated curriculum;

a clear specification of these understandings in the curriculum design.

For continuous assessment the focus is on the following issues:

understanding of new educational values and agenda as set by the new curriculum;

-a clear grasp of the new uses of examination (i.e. a clear differentiation between formative and summative evaluation, and between guidance and selection – based assessment);

an understanding of the relevance to evaluation of the new expanded assessable skills;

an understanding of the implications of the new orientation in assessment for teaching methods, classroom organisation, and teacher/student roles;

a clear understanding of the concept of integration implicit in the whole innovation (i.e. an awareness of the interrelationship between all three innovation elements).

For Guidance and Counselling the question emphasises:

the need for clear understanding of the new value orientation in educational outcomes and its implications for assessment procedures;

an understanding of the interrelationship between the curriculum and continuous assessment; a clear understanding of the co-ordinating role of guidance and assessment;

an understanding of new student roles and needs, and new teacher roles and needs.

In effect there is need to see how far the rationale and objectives of the curriculum are supported by the continuous assessment, guidance and counselling innovation components. The research question on conceptualisation will be deemed adequately answered if the evidence demonstrates a high degree of cohesion within and between the innovation components. But the research evidence shows an inability to respond coherently to the issues raised. The same degree of conceptualisation deficiency runs through all three innovation components. For example the essential properties of integration subsumed in the innovation have not been properly understood and demonstrated by planners and designers in the

innovation. Thus each innovation element had been designed and operated in isolation from others. There had been failure to realise that each component derived its meaning from an interrelationship with the rest, and are thus mutually supportive of each other. This has implications for content and strategy in implementation, which should have been demonstrated in all three elements.

The most typical form of this gap is shown in the dominant teaching strategy, which has failed to provide classroom experiences that would make possible the implementation of the three innovation components of curriculum, continuous assessment and guidance and counselling. Thus, although there is an implicit intention in the JSS innovation to support a curriculum change by means of a change in assessment procedures through the application of astute guidance and counselling, no change has occurred because none of the innovation elements has been implemented effectively in practice. Clearly this demonstrates a lack of understanding of the basic principles of integration and cohesion that are the essence of innovation. This deficiency is reflected in each specific innovation element in a variety of ways, which, for convenience, will be discussed under two further sub-heads: rationale and cohesion/linkage.

Rationale

A good rationale is one that is seen to justify effectively the goals and objectives as specified by the innovation. Evidence arising from this research has revealed doubts and conflicting interpretations as to the intentions of the innovation as specified and hence challenges the basic assumptions about the problem to be solved. The JSS innovation as proposed by the NPE is intended to prepare students adequately for absorption into the world of work, and also to a lesser extent for further education within a general education system. It was assumed that a large majority of students would go into the job market after the JSS. This

has placed on the curriculum the responsibility of providing a course that is equally suitable for full vocational as well as academic training, and on the continuous assessment and guidance and counselling the onus of selecting and distributing candidates to the various end of course options provided. These assumptions have been proved unrealistic and the provisions made for their realisation are therefore inadequate. In order to resolve the confusion in intentions and objectives, the planners are beginning to 'negotiate' with all other actors at other system levels in order to arrive at clearer specifications of meanings: but this is occurring nearly a decade and a half later.

For curriculum planners, this difficulty in clear rationalisation manifests itself as inability to distinguish and define the needs with resultant design fault where the course is attempting to offer content suitable for pre-vocational and full vocational training at the same time. This impossible task snowballs into confusion about resource planning, teaching methods and management, a condition typical of similar attempts elsewhere. The truth is that this level of differentiation in curriculum vocationalisation (Lillis & Hogan, 1983) requires a much higher level of expertise than is available to the Ghanaian education system and underscores the whole problem of pre-employment training in schools (Blaug, 1973; Lauglo, 1988; King & McGrath, 2002; Oketch, 2007; Brewer, 2013; Akyeampong, 2014).

Examples from the field in this study confirm the deficiency of this approach to curriculum vocationalisation. The JSS structure based on this rationale is equally faulty. The students' aspirations both in their eventual careers and immediate post-JSS activities reject the intended goals of the JSS innovation. The parents equally reject the JSS structure. In the face of alarming rates of unemployment at all levels of the socio-economic system up to the university (and including laid-off workers), 15 year old children, with only JSS certificates,

would certainly be greatly disadvantaged in the competition for employment. This was poignantly identified by one student referred to earlier in her questionnaire (*see* p.288).

This is a problem with vocationalisation of education that had been identified in the literature earlier (Foster, 1965; Nwakoby & Lewin, 1991; Oketch, 2007; Akyeampomg, 2014). Indeed, as pupils at Achimota made clear, students go into secondary school for the full course, which would enable them to prepare for further studies. If they wanted pre-vocational training, they would go directly into apprenticeship or a trade school from primary school. They pointed out the fact that most of their friends who wanted vocational training had already had three years experience since leaving primary school. There may seem to be a suggestion in this trend for the need to heighten more activities in the informal apprenticeship sub-system (Fiah, 1981; King, 2001) but it would be beyond this work to engage in this line of enquiry. What needs to be emphasised is the evidence from this research that those students who do manage to go into secondary schools tend to have aspirations that seem to be contrary to the options offered by the JSS structure. Most want to complete a full secondary school course, which they see as the key to their own future careers. It becomes irrelevant therefore, under the prevailing economic circumstances, to plan for a JSS structure that ill-prepares students for any particular proficiency in employable skills or for a smooth programme to SSS. In fact, though the proposal is for a 40% transition rate, the Director of Education (Basic Education) GES in 2014 told the researcher that a 95% transition was envisaged based on previous criteria. In reality, both the Director-General and the Deputy Director-General, GES, had a 95% transition with the failures given the option of repeating (which was not in the original policy). All indications therefore are that the JSS structure is not viable and should be amended urgently. What is required perhaps is more emphasis on new orientation rather than yet another restructuring of the system.

With regard to continuous assessment (CA) a similar conflict in conceptualisation is identified because in spite of the claimed intention of 'liberalising' assessment, the procedures specified do not seem to have been focused on the same objectives of either the curriculum or the new assessment. The designers of the CA procedure like the curriculum planners have been guided by the same assumptions about the ultimate goals of the JSS programme and have therefore tended to emphasise the summative and selection uses of CA to the detriment of the formative uses. The approach has shown very little real understanding of the new orientation in educational values that was required. This conceptual failure ensured that guidance and counselling never took off since its centrality in the whole innovation was not appreciated.

Surprisingly this inadequacy in conceptualisation and the setting of rationales for the innovation is not included in the list of barriers to innovation identified by Havelock and Huberman (1977) but their problem-solving analytical tool has enabled it to be clearly highlighted. The importance of the interdependence between problem identification, policy for solution and the maintenance of interaction between them, cannot be under estimated if the goal is to encourage a satisfactory level of cohesion in the planning and design process. This all reduces to the issue of cohesion.

Cohesion/Linkage

The JSS curriculum design, as evidence shows, lacks internal as well as external cohesion. Although the concepts of inter-relationships, interactions, interdependencies and linkages at different subsystems are strongly implied, the planners failed to elaborate these ideas into a coherent working theme and to reflect an understanding of their implications in the curriculum planning design. For example the researcher's evidence has shown that internal cohesion and integration have not been successfully maintained in the designing of syllabuses such as Introductory Technology and Business Studies. In spite of the intended objective of

presenting one integrated subject in each case, according to the conceptual frame of reference, the designers have been shown to revert to the old format of compartmentalising topics into unrelated subject areas. This results in failure to bring out clearly the vertical relationship among topics within the same subject boundaries and also the horizontal interdependence across subject boundaries. No attempt is made to identify and maintain common grounds. Thus hardly any interdisciplinary activities have been suggested in either curriculum design or the planning of classroom activities to facilitate the transfer of learning from one subject area to another. Nor has there been sufficient attempt to integrate school activities with the realistic concerns of the economic world outside as originally proposed and was testified to both by actors in the education system and those in the employment sector. Such an inability, to explore and extend the vertical and horizontal linkages between subjects and between the school and society in the curriculum design, limits the scope of opportunities in knowledge and career options made available to the learners because they are unable to identify viable combinations between subjects to enable them to maximise their choices. Of course, it may be that the best preparation for an uncertain and flexible employment experience in the future is the ‘old’ liberal education, and not to attempt anything vocational or even pre-vocational. That is, however, a philosophical issue that was perhaps not seriously confronted when reform policy was being formulated.

In the continuous assessment innovation the same lack of grasp of fundamental concepts of integration is evident at regional system and school levels in particular in the specifications of assessment criteria in all three domains of learning. Thus there is the tendency to skew assessment procedures in favour of the cognitive outcomes, a fact that makes the assessment systems regress to old, examination concepts and the testing of narrow and low level abilities. Clearly the evidence shows an inability to conceptualise continuous

assessment in relation to the requirements of either the curriculum or guidance and counselling elements. This gap in cohesion and interdependence in the innovation elements has made it impossible to establish linkages either within or between the elements in a manner demanded by the innovation

Implementation

Three questions were addressed concerning the efficiency of planning and management of the implementation of the innovation. These were:

1. How much planning and management capability exists in the system to permit clear specifications of functions, tasks, skills and procedures requisite for each innovation element?
2. How far does there exist the capacity for efficient marshalling, deployment, and co-ordination of resource flow and utilisation in the system?
3. What evidence is there that the system possesses the expertise to effect and sustain implementation of each innovation component?

It is important to remember here the one positive finding about the innovation: in spite of so many problems, there has remained a commitment to proceed with implementation. But having said that it has to be acknowledged in answer to the research questions that implementation has been plagued with the range of barriers similar to those catalogued by Havelock and Huberman (1977) and exposed in the work of Lewin (1981) in Malaysia and Sri Lanka. Perhaps the greatest barrier has been the absence of any identifiable strategic framework that has been applied with the result that all activities seem to have been contingency measures without cohesion or co-ordination.

Right across the three innovation elements there are certain common problem-solving inadequacies that have been observed and which indicate very low level of infrastructural capability in innovation management. These gaps have shown up as:

- lack of communication policy and poor communication management, including preparation in essential innovation skills;
- inefficient and ineffective operationalisation;
- inadequate organisational structures;
- ineffective integration of socio-economic objectives and structures.

In addition, each innovation component has other implementation problems specific to its own nature. The common inadequacies will be discussed before highlighting individual cases.

Inadequate Communication Management:

The most serious example of the state of communication in the innovation process is the non-inclusion in the programme plan for implementation of a communication strategy. There is no integrated policy to facilitate intra/inter system communication flow as might have been expected. Rather there is a high degree of disintegration as actors of various system levels, unable to obtain crucial information, interpret and utilise what little information they have in their own way, or become indifferent and disaffected. Without that necessary free flow of information around all system levels it has become difficult for the 'negotiation of meaning' to take place properly since the actors, without sufficient knowledge about the innovation, do not possess enough negotiating power to generate meaningful dialogue. This gap in communication strategy has been characterised by the low level performance of actors observed in such essential skills as appraisal, adaptation, and improvisation which are possible only where the actor has been armed with sufficient knowledge to enable him or her to exercise critical judgment in regard of choices.

Available data has also disclosed that where attempts to communicate were made they were poorly managed. It was found, for example, that whatever information was circulated was given too late and was not sustained. That is to say, too little was done too late to make any appreciable impact. The channel of communication in practice for awareness creation

made it difficult for information to percolate to most actors who needed to be reached at all sub-system levels. For instance too few actors who were expected to implement, were involved for too brief periods in in-service courses, conferences and seminar/workshops on any of the innovation components. Neither were there provisions for follow-ups and reinforcements for the few initial attempts that were made. Available facilities such as the news media and social organisations like the PTAs and Town Union groups were not maximally exploited for passing on information to the general public. The communication procedure lacked the necessary degree of transparency that the innovation demanded nor were relevant materials provided at the right time and place and in sufficient quantity for any of the innovation components. The Handbook on CA which came into circulation in Eastern Region only in January 1991 is a case in point.

Inefficient Resource Planning and Management

Sufficient evidence was discovered by the researcher to demonstrate serious deficiencies in the planning and management of resources for effective implementation both at national and regional systems levels. Such inadequacies relate to providing staff, finance, materials, equipment, accommodation and other facilities.

With regard to manpower provision, it was revealed that actual recruitment of necessary staff was about three years late, while efforts to re-train existing staff were almost nonexistent. Again there is that inability to reflect any understanding of the basic concepts of interdependence and integration, which would have provided the key for co-ordinating and maintaining linkages even in resource planning. Thus, it would have been possible to identify expertise existing internally within the education system and externally in the community, and to have drawn on these in the planning for staffing and staff development.

A similar failing is evident in planning and management of other kinds of resources hitherto unused or under-used within the system such as accommodation and equipment and which are known to have been overlooked in the planning. This difficulty arises from failure to specify the nature of the integrated new subjects and to clearly differentiate them from the old ones so that what is being planned for becomes much clearer. By far the most critical of all resources are funding levels and mechanisms, the inadequacy of which account substantially for disruption in the progress of the implementation. Several times the progress of implementation stalled before an intractable financial hurdle. It was shown that the number of participants at conferences for instance, was constrained by available funds, that staff recruitment had to wait the supply of funds, that equipment and materials provision was in the long run controlled by the amount of money available. Funding is therefore a crucial factor in implementation. But it, in turn, has been determined by the following variables:

- unclear specification of actual problems;
- unclear specification of methods to meet the needs, i.e. solution choice;
- unclear specification of resources actually needed;
- inability to locate and appraise existing resources for possible use;
- lack of initiative to improvise;
- inaccurate statistical data base used for planning;
- the realities of the economy;
- political priorities.

All these, collectively and in complex interaction, had so influenced the budgeting, that planners could only present a distorted and irrational financial estimate whose size had been so daunting that the survival of each of the innovation components had been threatened by it. A logical response to this might have been to review the plan in order to perhaps reduce the size

of the innovation, but in the absence of any properly reasoned strategy the implementation was necessarily *ad hoc*. A valiant attempt by people like Dr Kwesi Botwe to rationalise the budget failed. Clearly a more realistic and efficient financial planning is so basic to successful implementation that action is required to re-examine the rationale on which budgeting was originally carried out.

Ineffective Implementation:

The findings of this research reveal that by the end of the first cycle of the JSS in June 1990, the innovation had been insufficiently and ineffectively implemented in terms of stated objectives and timetable. In none of the innovation components can it be claimed that the innovation had actually taken place.

For the vocationalised curriculum component the conceptual and management inadequacies already raised in this discussion made implementation impossible. Specifically these include:

- inappropriate course materials i.e. dissonance between stated curriculum objectives and the thrust of the content of curriculum materials provided;
- inadequate provision of course materials both in quantity and timing;
- inadequate provision of equipment and workshop;
- deficient expertise;
- inadequate skill training support;
- poor supervisory support.

The situation was such that even when equipment and materials were eventually provided these could not be utilised because of lack of competence in relevant skills. Because the implementers had been inadequately prepared in the necessary skills it was impossible for them to demonstrate any change in behaviour. New behaviours as are advocated by the

curriculum innovation, were not observed in case study schools in such aspects as new teaching strategies being employed by teachers to stimulate enquiry; experimentation and clear thinking, aimed at the acquisition of the higher learning skills in all performance domains; a greater degree of interaction in the classroom between teachers and among students themselves; a closer integration of activities across subject boundaries; and more interaction between the school and the society.

With regard to the implementation of continuous assessment (CA) the following general conditions were observed:

- inability to perceive the actual difference between the old examination goals and the new orientation implicit in the CA;
- the persistent dominant influence of old examination methods;
- inadequate skills in the specifications of new criteria for assessment;
- inadequate skills in the construction and application of assessment instruments;
- inability to move assessment beyond the level of mere knowledge recall;
- inability to differentiate and provide for both formative and summative evaluation;
- insufficient and late supply of necessary assessment materials;
- non-provision of skill-training and supervisory support.

By the end of the first cycle, it was evident that implementation had been so inefficiently carried out as to cause doubts about the validity of the whole continuous assessment innovation. Implementers had lacked the necessary skills in the design and application of the wide range of instruments to assess the extended performance skills. Emphasis had in fact been placed only on the cognitive skills to the detriment of the others, which was contrary to the innovation proposals. At no time were students given the opportunity to demonstrate their ability in other areas of performance. There was no opportunity for formative assessment for objective re-appraisal and the plan to de-emphasise formal examinations paid only ‘lip-service’. The workload generated by the assessment and recording procedures proved too

much for teachers who then took *adhoc* measures that cast further doubt on the validity of the school-based assessment. In the face of all these difficulties, no effort was made in experimentation and development of creative problem-solving strategies in the teaching/learning situation. Students were never offered the chance for self-appraisal or to rise beyond mere comprehension performance level. Nor were they ever required to prove themselves in the affective and psychomotor performance domains. Teachers maintained control of all transactions and no initiative was ever observed by the researcher to have been exercised by the students.

The inadequacies in the implementation of both curriculum and continuous assessment innovation components had a snow-balling effect on the implementation of guidance and counselling in schools. Though the basic concepts are the transfer of greater freedom and responsibility to students in making personal decisions through greater opportunities for discussions and self-appraisal, the school and classroom transactions never allowed this to happen. Teachers maintained control of all transactions and no initiative was ever observed to have been exercised by the students. Because formative evaluation was impossible under conditions which made every assessment an examination case guidance was rarely practised. Career guidance was minimal since the curriculum had in fact had little provision for exposure to information about jobs in spite of the obsession with education for jobs. The implementation of guidance and counselling thus floundered under the inadequacies of both the conceptualisation and implementation of the curriculum and continuous assessment components, a fact that reinforces the integrative nature of the whole innovation.

In effect, data on implementation have failed to produce evidence to support any claim to success in any of these behaviours intended to enable the learners to develop into well-balanced individuals who would be able to fit competently into a modern socio-economic

world by virtue of their exposure to the new curriculum. Once again failure in this problem-solving phase can only be fully understood in relation to failure in other phases, and vice-versa, and whatever corrective action that is sought here must take into consideration what must be done in the other phases. Thus in suggesting that action is required to make it possible for the planned curriculum to be implemented in future, one is aware that this can only be profitably undertaken in conjunction with all other actions that are necessary for achieving relevant level of system completion in the other innovation components of continuous assessment and guidance and counselling.

Inadequate Organisational Structures:

Issues for consideration are: improper creation of structures, lack of co-ordination and linkages between structures; under-utilisation of existing structures; lack of linkage with structures outside the education system. The problems here are properly those of management inadequacy: the structures available within the system do not seem to have been made to carry the burden of innovation implementation effectively. This problem can again be explained in terms of failure to grasp the basic concept of inter-system integration/interaction, which is so crucial in this reform as well as in this examination of it. Because of this, we discover that little effort is made firstly to coordinate the activities of the different arms of the education system and, secondly to link school activities with those in the socio-economic world with the result that efforts and energy are wasted in useless duplication and under-utilisation of resources.

The Implementation Committee was created to coordinate implementation activities. This research shows the Committee to have been working very much in isolation, planning and executing its activities directly without engaging the services of other structures that may already exist in the system. Thus for example, the services of the National Inspectors were not

considered for use in the Regions where they already operate. Actors are compartmentalised in their divisions with little interaction across functional boundaries. Unnecessary duplication of resources and efforts and often rivalries result from such inefficiency as is exemplified in the relationship between GERC, CESAC and even the Implementation Committee.

At regional level the fragmentation becomes even more acute as activities are constrained within established structures with little co-ordination between the MOE, the GES and the schools. Thus teacher trainers in colleges of Education and Universities are shown not to have been involved in any of the innovation activities while the different divisions in the MOE itself carry on their direct responsibilities without being aware of any relationship with activities elsewhere in the system. Similarly the innovation components, each one based in a different division of the Ministry operates in total disregard of the existence and functions of the others in the whole innovation process, again emphasising the insufficient grasp of this basic concept of integration that characterises the innovation.

Similarly there has been a lack of awareness of the importance of establishing linkages with structures that exist in the society. Evidence has shown little contact with such organs as exist in the employment world, which if properly approached, could have made very useful input into the innovation. But management procedure has not made provision for such linkages.

Action is sought for a management style that would create awareness for the need for the coordination of activities and the establishment of linkages for greater efficiency in implementation. This should be done not necessarily by creating new mechanisms but by ensuring that structures already available in the system are creatively adapted and put to new uses. A major new behaviour here would require a shift from the closed mechanistic management style to a more open organismic approach that is flexible, a strategy that would

tend to draw from both Havelock's (1973) open/flexible approach and linkage model as well as from communication/diffusion strategies identified by Roger & Shoemaker (1971).

Evaluation.

One research question is directed at the evaluation phase of the problem-solving cycle, which is:

> 'To what extent can the system be said to possess ability to devise and operate an effective evaluation mechanism?'

This study has maintained throughout the important function of evaluation in terms of the innovation process, which permits new insights to be developed and original ones confirmed as actors have opportunities to test, reappraise or argue earlier assumptions. It is evaluation that makes possible this dialogue between theory and practice, between conceptualisation and implementation. Evaluation reports enable actors to make critical judgments whether to continue implementation as already in progress or adapt or change direction.

The findings, however, have shown a lack of awareness on the part of planners and implementers of this crucial role of evaluation in the innovation process, a mechanism for system self-regulation and renewal. This failure is marked by the inability to specify what is to be evaluated and what form evaluation should take. Neither in the Ministry system level nor in the school level was evaluation perceived appropriately as a tool for self-improvement/correction. The dominant tendency is to see it more in relation to formal examinations. Hence, while schoolteachers are more intent on getting students to be 'word perfect' for the purposes of accurate recall, Ministry officials are concerned for the maintenance of standards, that is, policing the schools. Meanwhile the essential elements of formative evaluation are ignored.

Evidence from this research shows that no mechanism for feedback has been formally established for efficient review and redirection of decisions and actions. Existing structures within the education system are not co-ordinated and utilised for stimulating such dialogue so as to bring about further decisions and actions. Evaluation in practice has been done in a purely *ad hoc* manner with no particular structure responsible for organising information that might have been generated had it been effected differently. Such a structure would also ensure that the information collated would have been presented in a form that would be usable for further improvement of the innovation process. This study has revealed similar evaluation practice as documented by Havelock and Huberman (1977) where the most frequently used mechanisms were descriptive written reports, special meetings, oral reports, quantitative written reports and open discussions, in that order. The authors argued that the nature of these methods indicated that evaluation was centralised and was done as inspection by officials or experts, a procedure which is typical of the process examined in the JSS reform in Ghana.

Action that is sought is for a redefinition of the place of evaluation to enable actors to develop an enhanced perception of the increased uses of evaluation. Furthermore a mechanism within the organisational structure of the education system is required to coordinate and prepare information from evaluation activities of all the three components of the educational innovation.

Altogether the findings show an infrastructural capability that is unable to support any of the JSS innovation components as hypothesised. The inadequacies suggest a number of necessary measures that must be considered if any improvement is to be made to strengthen the problem-solving capability. Some of these are categorised below as they apply to the different innovation elements. For the Vocationalised Curriculum:

Actions on conceptualisation:

- undertake a more effective synthesis of the basic concepts so as to formulate more clearly a theoretical framework to guide all the innovation components.
- evolve a more valid rationale for the setting of goals and objectives through the re-examination of identified problems and selected solutions.
- re-design/adapt the syllabuses for proper orientation towards a pre-vocational course.
- review the transition options and hence the JSS structure.

Actions on implementation:

- developing an articulated communication policy.
- improve the planning and management strategy for communication in terms of coverage, variety, persistence and timing, for better circulation of information about the innovation.
- re-examine the rationale for resource planning with particular focus on budgeting.
- evolve a more effective procedure for the acquisition and deployment of resources.
- improve system capability in dealing with statistical data as a basis for planning.
- better co-ordination of recruitment and in-service training of staff.
- develop a flexible management style that will encourage linkages and more efficient use of established structures within the school, the region, and national education systems and within the community.

Action on Evaluation

- make deliberate effort to link the school and society.
- institutionalise evaluation through the establishment of a dialogue and feedback mechanism to initiate and co-ordinate evaluation activities.

For Continuous Assessment

Actions on conceptualisation

- facilitate a clearer awareness of the purposes and objectives of continuous assessment.
- undertake a review and clearer specifications of the wide-ranging implications of continuous assessment and guidance and counselling innovation components.
- set out clearer specifications of assessment criteria in all three performance domains to reflect their integrated-ness and equal status.

Actions in Implementation

- provide opportunity for all actors at every system level to acquire information and skill, in using this new assessment technique.
- design classroom management strategy that includes formative assessment as part of teaching/learning strategy.
- develop a reporting style that is truly representative of the new orientation in assessment.
- provide equal learning opportunities for students to demonstrate their abilities in the three performance domains.
- provide administrative and structural support to facilitate continuous assessment operation.

Actions on evaluation

Maintain a strong expert support in the design and application of assessment instruments and for the monitoring and maintenance of standards.

For Guidance and Counselling

- re-define and clarify the purpose of assessment so as to properly locate the role of G & C in the JSS innovation;
- develop strategies that create opportunities for greater student role in decision-making in the classroom;
- help students develop skills in interpreting and applying assessment reports for self-appraisal and further decision-making;
- enable teachers understand their new roles as demanded by G & C.
- provide within classroom organisation opportunities for formative evaluation;
- devise assessment and reporting format that reflect equal judgemental weighting distributed to cognitive, psychomotor and affective skills.

Evaluation of Findings on the Authority (A) and Consensus (C) Factors

Once more I shall discuss these two factors together since the exercise of authority and the generation of consensus are considered in this study as two sides of the same issue. Three questions have been used to probe different aspects of the exercise of authority in the innovation process. These are:

(i) To what extent can decision-makers in control of government be seen to exercise political authority of the innovation?

(ii) How far can actors responsible for bureaucratic administration be seen to exert relevant authority in favour of the innovation?

(iii) To what extent are various groups of actors in different sub-systems of responsibility be seen to be mutually supportive in the interest of the innovation?

These questions have been used to explore the role of political administrative and professional decision-makers in the implementation of the innovation.

Four questions address issues of consensus thus:

(i) What degree of interaction and dialogue would appear to exist between actors at various sub-system levels?

(ii) To what extent can the system be observed to have adequately exploited channels for negotiation to establish common understanding about the JSS innovation?

(iii) How far can actors be said to be committed to the implementation of the innovation?

How far is the system able to monitor, supervise and re-direct effectively the different activities of the innovation?

Emergent Issues of A and C

In spite of some goodwill and general acknowledgement of the need for change the level of authority and consensus over the innovation was considerably lower than what was required particularly in the first two years. Neither of the decision making sub-systems was able to muster enough authority to generate consensus and energise implementation. An A- authority configuration was seen to induce a corresponding dissonance in the system as C- and even where a good infrastructure was supposed to be present this gap in authority destabilised it incompetent as I-. The following specific issues emerged:

(i)***Inadequacy in Political Leadership***

The innovation initially had a very low authority support under civilian political leadership owing to lack of consensus on resource sharing. But when the military took over there was marked improvement though still below required level. As research evidence showed, an organisation operating a 'power' culture, as in the case in Ghana, requires resource power to make its authority legitimate and influential. Under the pressure of economic recession in the country this resource base is lacking and therefore induces a state of A- configuration in spite of the obvious commitment of the military regime to the innovation.

In order to muster the relevant power base to enable it to control the innovation, the political leadership needs to re-appraise its assumptions, objectives and strategy. Havelock and Huberman (1977) suggested some possible innovation patterns with their demands on system factors. One such is the EL-BC+ which requires only I-A+C+ where the elements, i.e. the size of the innovation is small though the expected behaviour change is complex. In considering any alternatives however care has to be taken to reflect the particular characteristics and needs of the Ghanaian JSS reform. Evidence from this study has shown that some of Havelock and Huberman's permutations cannot be applied in the Ghanaian situation. Is it possible, for instance, to reduce the scale of the innovation without radically altering the essential characteristics and the thrust of the educational change? The leadership may therefore consider the following actions:

- re-examine the idea of skill training in schools and its limitations
- re-consider the concept of curriculum diversification in order to get more accurate definitions of what is required
- examine the resource and manpower implications of pre-vocational training
- explore the environment to identify un-used and under-used resources within
- improve skill training and information circulation
- strengthen existing organs charged with the management of the innovation.

These actions if taken would make the problem-solving capacity more effective and also boost the authority base of the leadership. The necessary adjustments would improve implementation without necessarily altering the innovation in any fundamental ways.

(ii)*Inadequate Bureaucratic (Administration and Professional) Leadership*

Three major factors were responsible for the erosion of bureaucratic authority over the period of innovation and these are: lack of relevant skills; adequate resources; and

coordination. The last has been particularly severe because information could not be circulated where and when it was most needed. Implementation became fragmented and meaningless both at the National and Regional sub-systems.

Without requisite skills and essential political support, actors at this level could take no initiative, for example, over resource provision where such could in fact be obtained locally. This study argues that a strategy that puts coordination and training issues at its core would radically improve the authority of administrators and professionals through the innovation. Details of such a move will be examined later.

(iii)*Inadequate Level of Consensus*

The findings have disclosed a very low level of positive response at the grassroots for the innovation because of insufficient interaction and dialogue between the super-ordinate decision-makers and the implementing sub-systems. Provision for monitoring and supervision was very poor and so was opportunity for discussion through which feedback could have been provided. Without sufficient information about the innovation, people made their own interpretations and drew their own conclusions, which were often at variance with what was proposed. Worse still, there was low-level of commitment noticeable at school level. Such negative evidence running through the discussion demands that solutions be urgently found if the innovation were to survive. The next section will be proposing some such measures.

Conclusions and Recommendations

Conclusion

For this innovation the hypothetical configuration was formulated as:

EL+ BC+ requiring I+ A+ C+

My assessment and conclusion is that in all the components of the educational innovation the problem-solving configuration, at all sub-system levels – National, Regional and school – within their functional boundaries, has been as follows:

EL+ BC+ with I- A- C-

The only conclusion then is that the level of system completion achieved by the educational innovation at the beginning of 2000 was exceedingly low: implementation has been gravely inadequate as all the crucial factors have been proved deficient. In none of the components have there been any noticeable changes in behaviour as had been intended.

In the process of applying general systems theory to the analysis to demonstrate the centrality of the concepts of integration, interdependence and cohesion as basic characteristics of the system development this research had further extended the IAC model. I then discovered that it is not enough just to have attained the required level of system factors, i.e. the I, A, C variables, but that they must also demonstrate a high level of interdependence, interaction and cohesion between them. The I, A, C factors are mutually and functionally supportive and without this crucial interrelationship between them they would be unable, as the thesis has demonstrated, to support the required level of system completion even though separately they might be at the level required.

There has been a tendency for deficiency in one component to parallel and induce a decrease in quality of other components. The gaps that were thrown up by this study corroborate those identified by Lewin (1981) in Malaysia and Sri Lanka. Of the six principal barriers discussed by Havelock and Huberman (1977 p.227), four are significant to these findings and include:

- underestimation of the process: poor coordination and logistical planning, confusion and inadequate operational planning;

- underdevelopment: materials delay, manpower shortfalls and inflation,
- financial problems: insufficient financial support, poor economic conditions and prioritising;
- opposition from key groups: opposition by the ruling elite, conflicting ideologies, slow implementation, objections from special interest groups.

From the perspective of the IAC model as it has been developed here these barriers are all inter-related and any measure to overcome them must recognise this linkage factor. I argue furthermore that failure in linkage was caused principally by failure to co-ordinate and maximise the capacity of existing structures and facilities. The recommendations I now submit are therefore derived from this perception and are addressed to the actions already listed for attention. I should also emphasise that these actions, if properly implemented, would have potential for significantly reducing the cost of the innovation while enormously increasing the effectiveness of implementation.

Recommendations

Adoption of an Innovation Strategy

So far, there does not appear to be any well-articulated strategy that has been applied to the innovation. What is required is a strategy to guide the management of the innovation in a systematic manner (Lewin, 1981). The most appropriate strategy, considering the most serious of the inadequacies in the system, is one that is directed at the generation of effective communication for a higher level of problem-solving capability at all system levels. Havelock's (1973) '*Linkage Model*' referred to by Havelock and Huberman (1977) as 'Planned Linkage' strategy which is supposed to ''bring together all the positive elements'' of other strategies earlier identified, seems to the researcher to be appropriate to the innovation in question. In choosing the linkage model, attention is focused on the mechanisms for creating

effective linkages, networks, dialogue, co-ordination, evaluation, feedback and negotiation; gaps in these factors have been major causes of the dislocation in the implementation process of the JSS reform.

Two objectives are intended in this linkage strategy:

- to strengthen the internal cohesion of the system factors such that each component is logically well integrated by fully deploying all its internal network of structures and resources to maximum effect; thus the problem-solving processes will be better co-ordinated, the different power bases will become more available and more committed.
- to strengthen the external cohesion between the factors so that the problem-solving capability of one is firmly supported by the others through conscious linkages between them.

Creation of a Linkage Organ

The trend in this study has strongly indicated the need for a 'specialist' organ to manage the innovation. Already structures exist both at the National and Regional education subsystems, which could take on this role if given the chance. At the national level, the roles of the Implementation Committee should be reviewed *vis-a-vis* the GERC. The researcher therefore recommends the following actions at the *national level*.

(i) the strengthening of GERC as an innovation management subsystem by incorporating the Implementation Committee within it. This way the Research Council would acquire the political authority advantage of the Committee while the latter would benefit from the resources and expertise of the council;
(ii) CESAC should remain a department in University but maintaining a consultancy relationship with the Council and MOE headquarters;
(iii)the GERC, as the specialist system should then assume full management responsibilities for the innovation including establishing and maintaining linkages within the MOE and the Regional GES;
(iv)the GERC would need to have within it experts in the three innovation components to co-ordinate activities.

Having decided on the strategy and provided the structures, the actions listed below should then be considered in the next set of recommendation:

Strengthening the Infrastructure (I) Capability

The innovation management bodies should take action to improve the problem-solving capability in conceptualisation, implementation and evaluation of each innovation component as suggested below:

(i) Provide and Maintain Adequate Communication flow through the organisation of awareness creating activities such as seminars, conferences, workshops at a higher level of efficiency, coverage and duration than has ever been practised

(ii) provide opportunity at every system level to engage meaningfully in the discussions about the concept of the innovation in order to facilitate a higher level of understanding

(iii) publish information about the innovation components for wide circulation

(iv) use the media for further public enlightenment

(v)upgrade existing skills to the level appropriate for effectively implementing each innovation component.

Redesigning the Innovation Materials

On the basis of clearer definition and specifications of values, orientation and objectives of the innovation elements, it would be necessary to review existing materials for possible redesign. These should cover JSS curriculum materials, assessment instruments, guides and record sheets.

Resourcing

A much higher level of provision is required here, but emphasis would be on identifying and utilising what already is available for new purposes and upon improvisation. This retrieval procedure was left totally unexplored in the planning process.

- *Structures*

A higher level of co-ordination is required to bring together people in different divisions/units to work towards a common goal. The specialist organ would have to work out the best strategy to do this. Also there should be closer interaction between MOE and GES officials as well as teachers.

- *In-Service Training*

Training for different groups of actors must be organised to help each group acquire skills relevant to its responsibilities. Teachers especially need training in the conceptual and methodological skill in all aspects of the innovation.

- *School/Society Linkage*

The specialist innovation management organ must devise ways to bring school and society together. There are strategies that can facilitate this which must be explored. The activities of professional bodies, for example, must be tapped and co-ordinated for their usefulness to the innovation.

- *Developing a Feedback Mechanism*

The importance of evaluation must be emphasised by building into the operations of the innovation organ a strong evaluation unit that should co-ordinate supervision and monitoring and collate the reports, publicise them and initiate follow-ups. Again, the approach will need to be carefully considered.

- *Strengthening the Level of Authority Support: Persuasion/Lobby*

The innovation managers would need to develop strategies to win political support for the innovation, particularly with regard to resource and legislative support. Political authority might be more readily supportive if the resource, especially money involvement, is kept at a reasonable level. The bureaucrats – administrators and professionals would need adequate

grounding in the essential skills so that they possess sufficient expertise to give to their authority.

Demonstration of Success

This might be considered to be marginal, but it would help create a good impression and win support if the innovation could be shown to have some success stories. Since the introduction of the JSS, Ghanaian children are staying in school longer than before whether they like the vocational and technical work or not. It is probably a positive outcome of the reform. It would encourage the decision makers to be more favourably disposed in their support. The innovation organs must be able to publicise such successful events.

Strengthening the level of C

Dialogue

More dialogue should be encouraged with members of the community at large, particularly to explain the concepts and get to know community reactions. Teachers in school need more support from officials from MOE and GES through monitoring, supervision and in-service training as well as in the provision of relevant resources; this could flow from greater dialogue.

Administrative Support for Continuous Assessment

Finally, although actions required for each of the innovation components have been listed earlier, the researcher wishes to especially recommend here that administrative support must be provided if the CA innovation is expected to be meaningfully put into operation. As of now the consensus about the quality of the new assessment method is very negative. The innovation organs at both national and regional levels must consult to work out the best solution.

Future Research

The findings and recommendations from this study would contribute directly towards a higher level of system completion in the Ghanaian educational innovation and that some lessons from it, including the theoretical approach, may have potential rewards for other innovation projects. The study has raised more questions about the Ghanaian JSS reform, opening up new lines of enquiry for the future. Some of these are now discussed in more detail.

In-Service Training of Educational Personnel

The timing and duration of the in-service courses provided for the innovation were only part of the problem, but the major fault lay with the content of and mode of delivery. Very few of the training programmes attempted to discuss the concepts and assumptions of the innovation and its characteristics to enable the adopters understand it clearly. Most actors were therefore unaware of the range of behaviour changes expected of them. The Guidance Counsellor at the MOE had for instance declared to teachers at a workshop that she assumed everybody knew what guidance and counselling meant and so she would only be concerned with how it was to be operated. An Introductory Technology workshop had been conducted entirely in a school hall rather than in the workshop, yet the talk had concentrated on the identification, use and care of equipment.

There is an urgent need to undertake research into actual needs of course participants and how to design training programmes that are relevant to those needs. The contents would then focus on such specific need as:

- increasing the range of information available to participants on the innovation and increasing knowledge and understanding of the innovation;

- providing training in such specific skills as the drawing up of scheme of work, making lesson notes, construction of assessment instruments, assessment of non-cognitive skills and methods of assessment, reporting and recording.

Most training programmes were in the form of lectures even when they were supposed to be participatory workshops. Ways must be found to involve participants in workshop activities to make possible a real transfer of skills. So far the acquisition of new behaviours relevant to the innovation has been negligible.

Action Research into Classroom Transactions

In the long run, the success or failure of the innovation depends on what takes place in the classrooms. So far there is very little evidence of the innovation in action. Research is required to discover ways of enabling teachers improve their teaching strategies and increase interaction and experimentation in the classroom, as demanded by the innovation.

Continuous Assessment

Very little is known about the new concept of education, examination and continuous assessment, and worse still there is very little expertise in the field. Efforts must be made to promote research into this new field in Ghanaian education paying attention to such vexing issues as

- the construction of assessment instruments;
- standardisation and validity of assessment;
- maintaining a balance between formative and summative evaluation;
- the application and balance between assessment in the three learning domains;
- a new reporting system that can adequately reflect the new values and emphases in learning outcomes;
- a reorientation of all users to the new assessment method.

Curriculum Development

Already this study has revealed the inadequacy of the curriculum materials in use, a deficiency that is to a large extent attributable to lack of trialling to eliminate the problems. A re-evaluation of the available materials is required and where necessary alteration should be made. There should be efforts to localise the materials and where possible new designs should be encouraged. This line of enquiry should also explore possibilities of supplementing the materials with audio-visual-aids which have been totally absent in the schools. For this purpose a special project to mount audio-visual-aids workshops for schools should be planned. An integrated approach could be explored whereby different departments collaborate to produce a variety of teaching aids that can be used in common. The production could be incorporated into actual teaching activities in the classrooms. My discussion with teachers at Suhum indicated strong potentials of this kind of research.

Post-JSS Options

The data generated indicated that the JSS structure has not worked as it was intended. Some of the post course options offered such as at the Teacher Training Colleges (TTC's) and through possible employment had already disappeared before the first cohort graduated from the programme in June 1990. There is a need to study more carefully the aspirations of parents and children *vis-a-vis* the realities of the socio-economic world. With a better knowledge of what is actually available, a more reasonable plan could be reached. In the process, it may be possible to monitor the phenomenon of increasing numbers of girls in secondary schools as some figures in this study have suggested. The investigation may reveal trends that may be of significance to curriculum design and the range of courses on offer both from the perception of the female students and from the boys who may be able to explain better the bases of their preferences.

This study set out to investigate the fierce debate that erupted at the introduction of the JSS educational innovation in September 1987. In the end, its findings have confirmed that there were indeed genuine reasons for concern. The challenge for the researcher has been to identify and explore strategies, which, while immediately capable of resolving the dissonance of this specific innovation, have potentials for application with satisfactory results in other similar educational innovating contexts.

Bibliography

Abban, C. M. (1994) Developing education, *West Africa*

Acheampong, O. (2009) Education Reform What Reform? http://blog.ucanmap.com [Accessed 20/11/2013]

Akyeampomg, A. K. (2014) Reconceptualised life skills in secondary education in the African context, lessons learnt from reforms in Ghana, *International Review of Education*, 60 (2) p. 217-234

Akyeampong, A. K. (2010) Educational expansion and access in Ghana: A review of 50 years of challenge and progress, *Research Monograph* No. 33

Akyeampong, A. K. (2007) Revising free compulsory universal basic education (FCUBE) in Ghana, *Comparative Education* 45 (2) p. 175- 195

Achola, P. P. W. & Pillai, V. K. (2000) *Challenges of Primary Education in Developing Countries, insights from Kenya* (Aldershot, Ashgate)

Addai-Mununkum, R. (2014) Rethinking Christian religious education: history, challenges, *Journal of Research on Christian Education*

Adams, J. (1981) The Contribution of education for self-reliance to manpower development in Tanzania – a critical appraisal, *International Journal of Educational Development* vol.1, N (2), p. 69-89

Adams, R. S. & Chen, D. (1981) *The Process of Educational Innovation: An International Perspective* (Kogan Page, The UNESCO Press).

ADB (African Development Bank) (2001) *African Development Report 2001*

ADB (African Development Bank) (2017) *African Development Report 2017*

Adu-Gyamfi, S. Donkoh, W. J. & Addo, A. A. (2016*) Educational reforms in Ghana: past and present, Journal of Education and Development* vol. 5 (3) p. 158-172

Adipah, B. K., Dzinyela, J. M., et al. (1995) *A Tale of Two Ghanas: The View from the Classroom* (Accra, Ministry of Education).

Afenyadu, D. (1998) Changes in practice and students' aspirations in the era of globalisation papers in *Education Training and Enterprise* No. 16 (Edinburgh, Center of African Studies)

Afenyadu, D., King, K., McGrath, S., Oketch, H., Rogerson, C. & Visser, K. (2001) Learning to compete: education, training and enterprise in Ghana, Kenya and South Africa Education *Research Serial No. 42, Education Division* (London, DFID)

Africa Union (2007) *Strategy to revitalize Technical and Vocational Education and Training (TVT) in Africa, Paper presented at a Meeting of the Bureau of the Conference of Ministers of Education of the African Union* (COMEDAF II +) 29-31 May 2007 Addis Ababa Ethiopia

Agbemabiese, P. G. E. (2007) *Emerging themes in educational reforms in Ghana as seen through education reforms in the United States*, unpublished PhD Thesis Ohio State University

Ager, D. (1996) *Francophonie in the 1990s: Problems and Opportunities* (Clevedon, Multilingual Matters)

Ahiakpor, J. C. W. (1991) Rawlings economic policy reform and the poor: consistency or betrayal, *The Journal of Modern African Studies* vol. 29 no. 4 pp. 583-600

Allsop, T., R. Attah, T. Cammack & E. Woods (2010) *Mid-Term Evaluation of the EFA Fast Track Initiative – Country Case Study: Ghana*, Cambridge Education Mokoro & Oxford Policy Management

Altbach, P. G. (1992) Servitude of the mind? Education, dependency, and neocolonialism, In P. G. Altbach, R. F. Arnove & G. P. Kelly (eds.), *Comparative Education* (New York, Mcmillan) pp. 469-484

Anamuah-Mensah, J. (1999) *Science and Technology Education in Ghana, A Paper delivered at the National Forum on the theme: Towards Sustaining an Effective National Education System*, Accra, International Conference Centre, 17-19th November 1999

Anarfi, J. K. & Appiah, E. N. (2012) *Skills defined by curricula: Sub-Saharan Africa. Innovative Secondary Education for Skills Enhancement (ISESE)* Washington DC: Results for Development Institute (R4D)

Anderson, J. (1970) *The Struggle for the School* (London, Longman).

Anderson, L. W. & Burns, R. B. (1989) *Research in Classrooms: The Study of Teachers, Teaching, and Instruction* (Oxford, Pergamon Press).

Anim, N. O. (1966) 'Ghana' In D. G. Scanlon (ed.) *Church State and Education in Africa* (New York, Springer Publishing)

Anson-Yevu, K. (1985) *Special Needs Education in Ghana* (Accra, Asempa Publishers)

Antwi, D. & Jenkins, P. (2002) The Moravians, the Basel mission and the Akuapem state in early nineteenth century, In H. B. Hansen & M. Twaddle (eds.), *Christian Missionaries and State in the Third World* (Oxford, James Currey).

Antwi, M. (1992a) *Education, Society and Development in Ghana* (Accra, Unimax)

Antwi, M. (1992b) Early development in education in Ghana 1880-1990, In C. O. Abosi and J. Brookman-Amissah (eds.), *Introduction to Education in Ghana* (Accra, Sedeco Publishing).

Apeanti, W. O. (2015) *Educational Reforms in Ghana: What are the views of Parents?* http://www.academia.edu/WilsonSafo 4755172 [Accessed 12/06/2015]

Apple, M. W. (1978) Ideology, production and educational reform, *Comparative Education Review* 22 (3) (October): 367-387

Apple, Michael (1976) Curriculum as ideological selection, *Comparative Education Review* p. 209-215

Ardayfio-Schandorf, E. (1999) *The State of Girls' Education in Ghana. A Paper presented at the National Education Forum* International Conference Centre, Accra.

Arthur-Mensah, N. & Alagaraja, M. (2013) "Exploring technical vocational education and training systems in emerging markets: a study on Ghana" *European Journal of Training and Development*, vol.37 ISS: 9, pp. 835-850

Arum, R. & Shavit, Y. (1994) *Another Look at Tracking, Vocational Education Social Reproduction* (European University Institute).

Aryeetey, E.; Harrigan, J. & Nissanke, M. (eds.) (2000) *Economic Reforms in Ghana: The Miracle and the Mirage* (Oxford, James Currey).

Asare, K. B. (2011) Community participation in basic education in the Kwabre Disrtict of the Ashanti Region of Ghana, *International Journal of Basic Education*, 2 (1), 43-52

Asare-Bediako, K.; Boachie-Danquah, K. et al. (1995) *Quality Assurance and School Level Management: A Review of the Management System for Basic Education in Ghana* (USAID, Ghana).

Asare-Bediako, K. & Nti, S. K. (2014) Teacher Education in Ghana: A Contemporary Synopsis and Matters Arising (*Sage Open*): 1-8

Asiedu-Akrofi, A. (1982) 'Education in Ghana' In A. Babs-Fafunwa & J. U. Aisiku (eds.), *Education in Africa: A Comparative Survey* (London, George Allen & Unwin)

Atkinson, P. & Hammersley, M. (1995) Ethnography and participant observation, In N. K. Denzin, & Y. S. Lincoln (eds.) *Hand Book of Qualitative Research*

Austin, D. (1970) *Politics in Ghana: 1946-1960* (London, O.U.P).

Austin, D. (1996) 'National poverty and the 'vampire state' in Ghana: a review article', *Journal of International Development*, 8, 4 pp. 553-73

Avotri, R. S. (1993) Comparative analysis of the traditional and the integrated curricula in Ghanaian secondary schools, *Issues in Educational Research* 3(1) 47-55

Awuku, A. K. (1998) *Executive Summary of Proposals on Teacher Education Policy* (Accra, Ministry of Education)

Bacchus, M. K. (1980) *Education for Development or Underdevelopment?* (Waterloo, Canada, Wilfrid Laurier University Press)

Baird, J., Johnson, S., Hopfenbeck, T. N., Isaacs, T., Sprague, T., Stobart, G. & Yu, G. (2016) On the supranational spell of PISA in policy, *Educational Research*, 58 (2) 121-138 Special Issue: International Policy Borrowing and Evidence-based Educational Policy Making: Relationships and Tensions

Ball, S. (1988) 'Participant observation with pupils'. In R. Burgess (ed.), *Strategies of Educational Research* (London, Falmer)

Ball, S. J. (1993) 'Self-doubt and soft data: social and technical trajectories in ethnographic fieldwork', In M. Hammersley (ed.) *Educational Research: Current Issues* (London, Paul Chapman Publishing).

Bame, K. N. (1991) *Teacher Motivation and Retention in Ghana: The Professional Teacher in Africa* (Accra, Ghana Universities Press).

Barkan, J. D. (1975) *An African Dilemma* (London, OUP)

Bartels, F. L. (1975) Akan indigenous education, In G. N. Brown and M. Hisket, (eds.), *Conflict and Harmony in Education in Tropical Africa* (London, George Allan and Unwin)

Bartels, F. L. (1975) *The Roots of Ghana Methodism* (Cambridge, Cambridge University Press).

Bediako, E. A. & Asare, K. B. (2010) Teachers' receptivity to curriculum innovations. *Ontario Journal of African Education Research*, 1, 81-94

Bell, J. (1987) *Doing Your Research Project* (Milton Keynes, Open University Press)

Bell, L. & Stevenson, H. (2006) *Education Policy Process Themes and Impact* (London, Routledge)

Ben-abdallah, M. (1986) *Statement on the State of the Educational System by the PNDC Secretary for Education and Culture* (Accra, Ministry of Education)

Bennell, P. (1995) *General Versus Vocational Secondary Education in Developing Countries: A Review of Rates of Return Evidence* (Brighton, UK University of Sussex, Institute of Developmental Studies).

Bennell, P. (1996) Privatisation, choice and competition: the World Bank's reform agenda for vocational education and training in Sub-Saharan Africa, *Journal of Educational Development* 8 (3): 467-487

Bennett, N. (1993) How can schooling help improve the lives of the poorest? The need of practical reform, In H. M. Levin & M. E. Lockheed (eds.) *Effective Schools in Developing Countries* (London, The Falmer Press)

Berger, P. & Luckman, T. (1964) *The Social Construction of Reality: A Treatise in the Sociology of Knowledge* (Irvington)

Bergman, H. (1996) Quality of education and the demand for education- evidence from developing countries *International Review of Education* 42 (6) pp. 581-604

Berry, L. (ed.) (1995) *Ghana A Country Study* (Washington DC, Library of Congress)

Bibby, J. & Peil, M. (1974) Secondary education in Ghana: private enterprise and social selection, *Sociology of Education* 47: 399-418

Biervliet, W. ; Dubbeldam, L. et al. (1996) Towards free basic education and literacy for all in Ghana, *NORRAG News; Special Theme: Education for All – For Whom? An Issue Related to the Mid-Term Review of EFA in Amman Jordan* (19) pp. 55-59

Bishop, A. J. (1995) Western mathematics: the secret weapon of cultural imperialism, In B. Ashcroft, G. Griffiths & H. Tiffin (eds.), *The Post Colonial Studies Reader* (London, Routledge) pp. 71-76

Blaug, M. (1973) *Education and the Employment Problem in Developing Countries* (Geneva, ILO)

Black, H. (1980) *The forms and functions of assessment, In T. Burgess & E. Adams (eds.) Outcomes of Education* (Macmillan Education Ltd)

Bloom, B. S. (1956) *Taxonomy of Educational Objectives* (London, Longman)

Bloom, B. S., Madaus, G. F., Hastings, J. T. (1981) *Evaluation to improve Learning* (London, McGraw Hill)

Boahen, A. A. (1975) *Ghana Evolution and Change in the Nineteenth and Twentieth Centuries* (London, Longman)

Boahen, A. A. (1996) *Mfantsipim and the Making of Ghana: A Century History, 1876-1976* (Accra, Sankofa Educational Publications).

Boahen, A. A., Akyeampong, E., McCaskie, C., Lawler, N. & Wicks, I. (2003) *The History of Ashanti Kings and the whole country itself and other Writings*, (Oxford, Oxford University Press)

Boakye, K. A. & Oxenham, J. (1982) *Qualifications and the Quality of Education in Ghanaian Rural Middle Schools* IDS Report, University of Sussex Institute of Development Studies.

Bowe, R. & Whitty, G. (1984) Teachers, boards and standards: the attack on school-based assessment in English Public Examinations at 16+ In P. Broadfoot (ed.) *Selection, Certification and Control* (London, The Falmer Press)

Boateng, C. (2012) Restructuring vocational and technical education in Ghana: the role of leadership development, *International Journal of Humanities and Social Science* vol. 2 (4) 108-114

Boeh-Ocansey, D. (1997) *Ghana's Microenterprise and Informal Sector Bedrock for National Development: Perspectives in Education Training and Other Support Services* (Accra, Anansesem Publications)

Bottery, M. (2004) *The Challenges of Educational Leadership Values in a Globalized Age* (London, Paul Chapman Publishing).

Braimah, A. I. et.al (2014) One state, two school systems: the instability of Ghana's school systems since the fourth republic *Journal of Education and Practice* vol. 5 no. 9

Braun, V. & Clarke, V. (2006) Using thematic analysis in psychology, *Qualitative Research in Psychology* 3 (2), pp. 77-101

Brewer, L. (2013) Enhancing youth employability: what? why? and how? *International Labour Organization (ILO) Skills and Employability Department: Guide to core work skills*. Geneva

Broadfoot, P. (1979) *Assessment, Schools and Society* (London, Methuen)

Brock, C. (1984) Junior secondary innovations in Nigeria and Saint Lucia: a comparative study, In B. Gorwood (ed.), *Intermediate Schooling* (The University of Hull).

Brown, G. N. & Hiskett, M. (1975) *Conflict and Harmony in Education in Tropical Africa* (London, George Allen & Unwin)

Burnett, N. & Jayaram, F. (2012) *Skills for Employability in Africa and Asia. Innovative Secondary Education for Skills Enhancement (ISESE)* Washington DC: Results for Development Institute (R4 D)

Burns, T. & Stalker, G. M. (1961) *The Management of Innovation* London, Tavistock Publications).

Burrell, G. & Morgan, G. (1979) *Sociological Paradigm and Organizational Analysis* (London, Heimann)

Bush, T. & Bell, H. (eds.) (1999) *Educational Management, Redefining Theory, Policy and Practice* (London, Sage Publications).

Busher, H. & Harris A. (2000) *Subject Leadership and School Improvement* (London, Paul Chapman Publishers)

Busia, K. A. (1962) *The Challenge of Africa* (New York, Frederick A. Praeger)

Busia, K. A. (1964) *Purposeful Education for Africa* (The Hague, Mouton).

CIA World-Fact Book (2017) *Ghana Literacy Rate*

Castle, E. B. (1966*) Growing up in East Africa* (London, Oxford University Press)

Chao, S. & Alper, O. (1998) *Accessing Basic Education in Ghana* (Washington DC, World Bank)

Chappell, C. (2003) Researching vocational education and training: where to from here? *Journal of Vocational Education and Training*, 55 (1): pp. 21-32

CHASS (1992) *Review of the Education Reform Programme*, Accra

CHASS (1994) *Review of the Education Reform Programme*, Accra

Clarke, P. B. (1982) *West Africa and Islam: A History of Religious Development from the 8th to the 20th Century* (London, Edward Arnold).

Cobbe, J. (1991) The political economy of educational reform in Ghana, In D. Rothchild (ed.), *The Political Economy of Recovery* (London, Lynne Rienner) pp. 101-115

Coffey, A. & Atkinson, P (1996) *Making Sense of Sense of Qualitative Data: Complementary Research Strategies* (London, Sage).

Cohen, L. Manion, L. & Morrison, K. (2000) Research Methods in Education (London, Routledge Falmer)

Cohen, Louis & Manion, L. (1994) *Research Methods in Education* (London, Routledge)

Colclough, C. (1994) *Under-Enrolment and Low Quality in African Primary Schooling: Towards a Gender-Sensitive Solution* (IDS Working Paper 7 Sussex, Institute of Development Studies).

Coleman, J. S. (1960) The politics of Sub-Sahara Africa, case no. 3, In G. A. Almond & J. S. Coleman (eds.), *The Politics of Developing Areas* (New Jersey, Princeton University).

Cooley, W. W. & Lohnes, P. R. (1976) *Evaluation Research in Education* (New York, Irvington Publishers).

Coombs, P. H. (1985) *The World Crisis in Education, the View from the Eighties* (Oxford, Oxford University Press).

Creswell, T. W. (2013) *Qualitative inquiry and research design: choosing among five approaches*

Crossley, M. & Tikly, L. (2004) Postcolonial perspectives and comparative and international research in education: a critical introduction, *Comparative Education* 40 (2): pp. 1-9

Crossley, M. & Vulliamy, G. (1996) Issues and trends in qualitative research: potential for developing countries, *International Journal of Educational Development* 16 (4) pp 439-448

Cumming, G. D. (1996) British aid to Africa: a changing agenda? *Third World Quarterly* 17 (3), pp 487-501

Curle, A. (1970) *Educational Strategy for Developing Societies* (London, Tavistock Press)

Daaku, F. (1996) *Evaluation of the junior secondary school reform a paper presented at a Conference* Accra, Ministry of Education

Daddieh, C. (1996) Education adjustment under severe recessionary pressures: the case of Ghana. In K. Mengisteab & B. I. Logan (eds.) *Beyond Economic Liberalisation* (item 126) 23-55

DAE (1996) *Formulating Educational Policy: Lessons and Experiences from Sub-Saharan Africa: Six Case Studies and Reflections from the DAE Biennial Meetings* (Paris: DAE Association for the Development of Aged)

Daily Graphic (1987) JSS Reform Accra: *Daily Graphic*, 10th November p. 2

Daily Graphic (1993) 'Why pay 10 million cedis to house one person when pupils and teachers must survive', *Daily Graphic* 15th June, p. 4

Daily Graphic (1999) 'Speech and prize giving day at Labone Secondary school' *Daily Graphic* December 9th p. 5

Datta, A. (1984) Education and Society: *A Sociology of African Education* (London, Mcmillan Publishers)

Delamont, S. (1976) *Explorations in Classroom Observation* (London, John Wiley)

Delamont, S. (1984) *Interaction in the classroom*, (London, Methuen)

Denzin, N. K. (1978) *The Research Act: A Theoretical Introduction to Sociological Methods*, (New York, McGraw Hill)

DFID (2000) *Statistics on International Development 1994/95 – 1998/99* (Department of International Development) (DFID)

Djangmah, J. S. (1994) *Education Reforms in Ghana: The Dream and its Implications; A Memorandum* to the Education Reform Review Committee, p. 5

Dogbe, K. (1987) *Reform of Educational Philosophy for Africa*, Annual Meeting of the US Comparative and International Education Society (Washington DC, Education Resources Information Centre) (ERIC)

Domenach, J. (1976) A hundred years ago, *Prospects*, vol. 6 no

Dore, R. (1976) *The Diploma Disease: Education, Qualification and Development* (London, George Allen & Unwin).

Duflo, E. Dupas, P. & Kremer, M. (2012) School governance, teacher incentives, and pupil teacher ratios: experimental exercise from Kenyan primary schools in *SSRN Electronic Journal* (Accessed 02: 2013)

Duflo, E.; Dupas, P. & Kremer, M. (2011) Peer effects, teacher incentives, and the impact of tracking: evidence from randomized evaluation in Kenya, *American Economic Review*

Dwomoh, Y. (1995) 'Ghana', In T. Postlethwaite (ed.) *International Encyclopaedia of National Systems of Education* (Pergamon)

Dzobo, N. K. (1975) Values in indigenous African education In G. N. Brown & M. Hiskett, (eds.), *Conflicts and Harmony in Education in Tropical Africa* (London, George Allen & Unwin)

Dzobo, N. K. (1971) Pre-university education in Ghana: a critical history part II *Universitas* vol. 1 No. 2 March 1971

Dzobo, N. K. (1969) Pre-university education in Ghana: a critical history part I Universitas vol. 1 March 1969

Earle, E. W. D. H. (1983) *The Development of Education in Pre-Independence Ghana* (Oxford Development Records Project Report 10 Oxford Rhodes House Library)

Economist Intelligence Unit (2000) *Global Economics 2000*

Eisner, E. (1992) Objectivity in education research, In M. Hammersley (ed.), *Educational Research: Current Issues* (London, Paul Chapman Publishing) pp. 49-56.

Elbadawi, I. A. & Ndulu, B. J. (2001) *Economic Development in Sub-Saharan Africa: Proceedings of the Eleventh World Congress of the International Economic Association* (Tunis*)*

Elbaz, F. (1990) Knowledge and discourse: the evolution of research on teacher thinking, In C. Day, M. Pope & P. Denicolo (eds.) *Insights into Teachers' Thinking and Practice* (London, Falmer) pp. 15-42

El-Garh, M. S (1971) The Philosophical basis of Islamic education in Africa, *West Africa Journal of Education* Vol. 15, no. 1

Elton, L. (1982) What kind of science teacher, In A. Jennings and R. Ingle (eds.), *Science Teachers for Tomorrow's Schools*, (Bedford way Papers No 7 London, University of London)

Eshun, F. M. (2013) The 2007 educational reform, *Contract Research org*. http://www.http://blogucanmap.com/news/475340/1/the-educational-reform-and-its-challenges-html [Assessed 03/05/2014]

Essuman, A. & Akyeampong, K. (2011) Decentralisation and practice in Ghana: the promise and reality of community participation in rural community participation in rural communities, *Journal of Educational Policy* 26 (4): 513-527

Etzioni, A. (1961) *Complex Organisations on Power: Involvement and their Correlates* (Glencoe, The Free Press).

EUROMONITOR (2001) *The World of Economic Fact-Book 2000/2001*

EUROPA (2001) *Africa South of the Sahara* EUROPA

Fafunwa, A. B. (1982) African education in perspective, In A. B. Fafunwa & J. U. Aisiki (eds.) *Education in Africa: A Comparative Survey* (London, George Allen).

Fage, J. D. (1959) *Ghana Historical Interpretation* (Madison, University of Wisconsin Press)

Felter, W. L. (1906) The education of women, *Educational Review* 31, 351

Fentiman, A. (1996) *Factors Influencing School Enrolment and the Health of School-age Children in Ghana*, UNICEF

Fetterman, D. M. (1989) *Ethnography Step by Step* (Newbury Park, CA, Sage Publications)

Fiah, S. (1981) *An examination of the role of education in supporting the rural economy of southern Ghana*, unpublished Doctoral Thesis, University of Hull

Fluitman, F. (1999) The roots and nature of reforms in vocational education and training: an analytical framework and some examples, *Prospects* vol. XXIX no 1

Fobi, D. et al (1995) *The Process of Education Policy Formation in Africa: The Case of Ghana* (DAE, Paris)

Foddy, W. (1993) *Constructing Questions for Interviews and Questionnaires* (Cambridge, Cambridge University Press)

Folson, R. B. (1995) *The Contribution of Formal Education to Economic Development and Economic Underdevelopment: Ghana as Paradigm* (Bern, Lang).

Fontana, A. & Frey, J. H. (1994) Interviewing the art of science, In N. K. Denzin & Y. S. Lincoln (eds.) *Handbook of Qualitative Research* (Thousand Oaks, CA, Sage) p. 361- 376

Foster, P. J. (1965) *Education and Social Change in Ghana* (London, Routledge and Kegan Paul).

Foster, P. J. (1971) The vocational school fallacy in development planning, In C. A. Anderson & M. J. Bowman (eds.) *Education and Economic Development* (London, Frank Cass).

Foster, P. J. (2000) Commentary, the vocational school fallacy revisited: education, aspiration and work in Ghana 1959-2000 *International Journal of Educational Development* 22 pp. 27-28

Fredriksson, U. & Fumador, A. (1998) *The Effects of Structural Adjustment on the Education Sector in Africa: with Ghana as a Case Study* Desk/field Study Accra: Education International, Ghana National Association of Teachers (GNAT) Teachers and Education Workers' Union (TEWU)-Ghana, Lararforbundet-Sweden

Frimpong-Ansah, J. H. (1991) *The Vampire State in Africa: The Political Economy of Decline in Ghana* (London, James Curry)

Fullan, M. & Miles, M (1992) Getting reform right: what works and what doesn't, *Phi Delta Kappan* 73 (10): 744-752

Fullan, M. (1999) *Change Forces: The Sequel* (London, Falmer Press)

Fullan, M. G. (1991) *The New Meaning of Educational Change* (London, Cassel).

Gbadamosi, R. (1999) *Educational Conditions in the Northern Regions of Ghana*, A paper presented at International Conference Centre, Accra

GES (Ghana Education Service) (1998) *Report of the GES Council on the Restructuring and Operations of the GES* (Accra, Ministry of Education)

GES (Ghana Education Service) (2000) *Towards Sustaining an Effective National Education System* (Accra, Ministry of Education, National Education Forum)

GES/UNICEF (1995) *A Study of Teacher Motivation and Conditions of Service for Teachers in Ghana*, (Accra, Ghana Education Service)

Ghanaian Times (1990) 'JSS reform' Accra, *Ghanaian Times* 29th – 31st January

Ghanaian Times (1989) 'JSS reform' Accra, *Ghanaian Times*, 15th January p.3

Glewwe, P. (1991) *Schooling, Skills, and the Returns to Government Investment in Education: An Exploration Using Data from Ghana*, LSMS Working Paper 76 (Washington DC, The World Bank).

Glewwe, P. (1996) The relevance of standard estimates of rates of return to schooling for education policy: a critical assessment *Journal of Development Economics* 51 (2) pp. 267-90

Glewwe, P. (1999) *The Economics of School Quality Investment in Developing Countries: An Empirical Study of Ghana* (Centre for the African Economics, University of Oxford)

Goetz, J. P. & Lecompte, M. D. (1984) *Ethnography and Qualitative Design in Educational Research* (New York, Academic Press)

GOG (2004) *White Paper on the Report of the Education Review Committee* Accra: Government of Ghana

GOG (1971) *Report of Education Commission on Basic Education* (Accra, Ministry of Education)

GOG (1986) *Report of Education Commission on Basic Education,* Preamble No. 4 p. iii

GOG (1994a) *Programme for the Provision of Free, Compulsory and Universal Basic Education by the Year 2005* (Accra, Government of Ghana)

GOG (1994b) Re*port of Education Reform Review Committee*, Accra

GOG (1995) *Ghana Vision 2020* (Accra, Government Printing Press)

GOG (1996a) *Basic Education Sector Improvement Programme: Policy Document, FCUBE,* (Accra, Ministry of Education)

GOG (1996b) *The Development of Education, 1994-1996: National Report from Ghana* (Accra, Ministry of Education)

GOG (Government of Ghana) (1985) *Committee Report on JS Education* (Accra, Government Printing Press)

Gold Coast (1951) *Accelerated Development Plan for Education 1951* (Accra, Ministry of Education and Social Welfare)

Gomes, C. A. (1999) New perspectives for secondary school: the case of Brazil, *International Review of Education,* 45 (1): 45-63

Goodall, H. B. (1998) *Beloved Imperialist* (Durham, The Pentland Press).

Gorwood, B. (ed.) (1984) *Intermediate Schooling* (Institute of Education, University of Hull)

Graham, C. K. (1971) *The History of Education in Ghana* (London, Frank Cass).

Grindal, B. (1972*) Growing up in Two Worlds: Education and Transition among the Sisala of Northern Ghana* (New York, Holt, Rinehart and Winston)

Grindle, M. (2004) *Despite the Odds: Contentious Politics of Education Reform* Princeton, NJ. Princeton University Press

Guba, E. G. & Lincoln, Y. S. (1987) Naturalistic inquiry, In M. J. Dunkin (ed.) *The International Encyclopaedia of Teaching and Teacher Education* (London, Pergamon Press)

Guba, E. G. & Lincoln, Y. S. (1989) *Fourth Generation Evaluation* (London, Sage)

Guggisberg, G. (1928) *The Post-War Gold Coast: A Review of Events of 1927 in Report on the Education Department for the Period April 1927-March 1927* (Accra, Government Printing Office)

Hailey, L. (1957) *African Survey*, London: (Revised in 1956 by O. U. P. 1957)

Haizel, E. A. (1985) *Education in Ghana, 1951-1996: The Life and Work of Kwame Nkrumah*, (Legon, Ghana Universities Press).

Hall, D. & Raffo, C. (2004) Re-engaging 14-16 year-olds with their schooling through work-related learning, *Journal of Vocational Education and Training* 56 (1): pp. 69-79

Hamdun, S. & King, N. (1975) *Ibn Battuta in Black Africa* (London, Rex Collins)

Hammersley, M. & Atkinson, P. (1995) *Ethnography Principles and Practice* (Psychology Press)

Hammersley, M. & Atkinson, P. (2007) *What is Ethnography? Ethnography Principles in Practice* (New York, Routeledge)

Hammersley, M. & Woods, P. (1984) *Life in School: The Sociology of Pupil Culture* (Milton Keynes, The Open University Press).

Handy, C. B. (1976) *Understanding Organizations* (Harmondsworth, Penguin)

Hanna, A. J. (1961) *European Rule in Africa* (London, Routledge &Kegan Paul).

Hanson, J. W. (1980) *Is the School the Enemy of the Farm? The African Experience, African Rural Economy Paper* No. 22, (East Lansing, Michigan State University) pp. 197

Hargreaves, A. & Tickle, L. (eds.) (1978) *Middle Schools: Origins, Ideology and Practice*, (London, Harper Row).

Hargreaves, A. et al. (1988) Personal and Social Education: Choices and Challenges (Oxford, Basil Blackwell).

Hargreaves, D. H. (1978) The two curricula and the community, *Westminster Studies in Education* Vol. 1 p. 36

Hart, K. (1973) Informal income opportunities and urban employment in Ghana, *Journal of Modern African Studies* ii 1: 61-89

Havelock, R. G. & Huberman, A. M. (1977) *Solving Educational Problems* (Paris, UNESCO)

Havelock, R. G. (1973) *The Change Agents Guide to Innovation* (Englewood Cliffs, New Jersey, Educational Technology Publications).

Hawes, H. & Coombe, P. (1986) *Education Priorities and Aids Responses in Sub-Saharan Africa* (ODA, University of London, Institute of Education)

Hawley, J. D. (2003) Comparing the payoff to vocational and academic credentials in Thailand over time *International Journal of Educational Development* 23 pp. 607-625

Hearn, J. (2000) *Foreign Aid, Democratisation and Civil Society in Africa: A Study of South Africa, Ghana and Uganda, Discussion Paper* 368 Institute of Development Studies University of Sussex

Helbling, L. A. & Sacchi, S. (2014) Scarring effects of early unemployment among young workers with vocational credentials in Switzerland, Empirical Research in *Vocational Education and Training*

Hilliard, F. H. (1956) *A Short History of Education in British West Africa* (London, Thomas Nelson & Sons) pp.11-12

Hinshaw, C. (1996) *Traditional and modern education in Francophone Africa: conflicts and complementarity's,* unpublished MSc dissertation Department of Educational Studies, University of Oxford

HMO (1925) *Education Policy in British Tropical Africa*, London, cmd. 2374

HMO (1948) *The Report of the Commission of Inquiry into Disturbances in the Gold Coast in 1948*, London Chapter 8

Honny, L. A. (1999) Reshaping vocational training: hopeful signs from a Ghanaian experience, In K. King & S. McGrath (eds.), *Enterprise in Africa: Between Poverty and Growth* (Southampton, Intermediate Technology Publications).

Hopfenbeck, T. N & Kjaernsli, M. (2016) Students' test motivation in PISA: the case of Norway, *The Curriculum Journal* 27(3), 406-422

Hountondji, P. J. (1997) (ed.) *Endogenous Knowledge: Research Trails* (Dakar, CODESERIA)

House, E. R. (1980) *Evaluating with Validity* (London, Sage Publication).

Huberman, A. M. (1973) 'Understanding change in education: an introduction' In *Experiments and Innovations in Education*, No. 4 (Paris, UNESCO)

Hunwick, J. (1997) Sub-Saharan African Islam, In D. Westerlund & E. E. Rosander (eds.) *African Islam and Islam in Africa* (London, Sage Publications).

Huq, M. M. (1989) *The Economy of Ghana: The first 25 years Since Independence* (London, Macmillan).

Hutchful, E. (1995) Why regimes adjust: The World Bank ponders its 'star pupil', *Canadian Journal of African Studies*, 29 (2) pp. 303-317

Hutchful, E. (2002) *Ghana's Adjustment Experience: The paradox of Reform* (Oxford, James Currey).

Imani-Ghana (2013) *The Forum for Education Reform: State of Education in Ghana*

Inkoom, A. (2012) *Implementation of initiatives to reform the quality of education in rural Ghanaian junior high schools,* Edith Cowan University, Perth Western Australia

ISSER (1993) *Ghana Statistics Institute of Social, Scientific and Economic Research* (ISSER) Accra

Jackson, S. A. Kimiecik, J. C. Ford, S. K. & Marsh, H. W. (1998) Psychological correlates of flow in sport, *Journal of Sport and Exercise Psychology* 20, 358-378

Javadi, M. & Zarea, M. (2016) Understanding thematic analysis and its pitfalls, *Journal of Client Care* 1 (1), 33-39

Jenkins, E. (2000) *The Muslim Diaspora: A Comprehensive Reference to the Spread of Islam in Asia, Africa, Europe and the Americas, vol. 2, 1500-1799* (Jefferson, NC, McFarland Publishers)

Jeong, Ho-Won (1995) Liberal economic reform in Ghana: a contested political agenda, *Africa Today* vol. 42 no. 4

Jervier, W. S. (1977) *Educational Change in Postcolonial Jamaica* (New York, Vantage Press).

Johnson, D. (2006) Comparing the trajectories of educational change and policy transfer in developing countries, *Oxford Review of Education*, 32, 5, pp. 679-696

Jones, P. & Barr, A. (1996) Learning by doing in Sub-Saharan Africa: evidence from Ghana, *International Journal of Educational Development* 8, 3, pp. 445-56

Kaba, L. (2000) *Islam in West Africa: Radicalism and the New Ethic of Disagreement, 1960-2000*

Kabay, S. Wolf, S. & Yoshi, K. (2017) Childhood education in urbanizing Ghana, *International Journal of Educational Development* vol. 57, p. 44-53

Karpat, K. H. (2001) *The Politicization of Islam: Reconstructing Identity, State, Faith and Community in the Late Ottoman State* (Oxford, Oxford University Press).

Kaye, B. (1962) *Bringing up Children in Ghana* (London, Frank Cass)

Keeling, R. (2000) *Project Management: An International Perspective* (London, McMillan)

Kerre, B. W.& Oketch, H. (1999) *The Influence of Schooling on Career Plans and Lessons among Graduates of Kenya School System* (Papers in Education, Training and Enterprise, No 19, Centre of African Studies, University of Edinburgh)

King, K. (1978) Education and self-employment, In *Education Work and Employment* (Paris, UNESCO)

King, K. & Martin, C. (2000) The vocational school fallacy revisited: education, aspiration and work in Ghana *1959-2000 International Journal of Educational Development* 22, pp. 5-25

King, K. & McGrath, S. (2002) *Globalisation, Enterprise and Knowledge: Education, Training and Development in Africa* (Wallingford, Monographs in International Education Symposium Books).

King, K. (1976) Educational planning and the world of work, In *Centre of African Studies*, (Edinburgh University, Mimeo)

King, K. (1977) *The African Artisan* (Heinemann)

King, K. (2001) Africa's informal economies – 30 years on, *SAIS Review Paul H. Neal School of Advanced International Studies John Hopkins University* (Washington DC, John Hopkins University Press) vol. xxi, No 1

Kingdon et al (2014) *A Rigorous Review of the Political Economy of Education systems in Developing Countries* IOE/UKAID

Kinsler, K. & Gamble, M. (2001) *Reforming schools* (London, Continuum).

Korboe, D. (1995) *Extended Poverty Study (PPA Phase 3): Access and Utilisation of Basic Social Services by the Poor in Ghana*, Kumasi Centre for the Development of People

Kosack S. (2009) Realising education for all; defining and using political will to invest in primary education, *Comparative Education* 45 (4): 495-523

Kraft, R. (1995) *A Tale of Two Ghanas: The View from the Classroom* (Accra USAID)

Lauglo, J. & Narman, A. (1987) Diversified secondary education in Kenya: the status of practical subjects and effects on attitudes and destinations after school, *International Journal of Education* 7 (4)

Lauglo, J. (1988) *Vocationalizing Education: An International Perspective (eds.) Jon Lauglo & Kevin Lillis* (Oxford, Pergamon)

Lauglo, J. (1992) *Vocational Training: Analysis of Policy and Modes* (Paris, International Institute for Education Planning)

Lavy, V. (1992) *Investment in Human Capital: Schooling Supply Constraints in Rural Ghana*, LMS Working Paper 93 (Washington DC, The World Bank)

Lavy, V. (1996) School supply constraints and children's educational outcomes in rural Ghana, *Journal of Development Economics* 51, 2, pp. 291-314

Lawrence, P. & Thirtle, C. (2001) Comparing African and Asian economic development In P. Lawrence and C. Thirtle (eds.), *Africa and Asia in Comparative Economic Perspective*, (Palgrave Publishers)

Leith, J. C. (1996) *Ghana Structural Adjustment Experience* (San Francisco, International Centre for Economic Growth)

Levin, B. & Riffel, J. A. (1998) Conceptualising school change, *Cambridge Journal of Education*, 28 (1)

Levin, H. & Lockheed, M. (eds.), (1993) *Effective Schooling in Developing Countries*, (London, Falmer)

Levtsion, N. (1966) Salaga – a nineteenth – century trading town in Ghana, *Asian & African Studies* XX,207- 244

Lewin, K. (1981) *Science education in Malaysia and Sri Lanka: An evaluation of curriculum development in the last decade*, DPhil Thesis, University of Sussex.

Lewin, K. M. & Little, A. (2011) Access to education revisited: equity, dropout and transitions to secondary school in South Asia and Sub-Saharan Africa, *International Journal of Educational Development* vol. 31 (4), 333-337

Lewis, W. A. (1953) *Gold Coast and Industrialisation: A Report* (Accra, Government Printer).

Lillis, K. & Hogan, D. (1983) Dilemmas of diversification: problems associated with vocational education in developing countries, *Comparative Education*, 19 (1): pp. 89-107

Little, A. W. (2010) *Access to Basic Education in Ghana: Politics, Policies and Progress*, Creative Pathway to Access Research, Monograph 42, London, University of London

Lockheed, E. & Hanushek, E. (1998) Improving educational efficiency in developing countries: what do we know? *Compare* 18 (1): 21-38

Loveridge, A. J. (1978) *British Colonial Experience in Educational Development: A Survey of Non-Formal Education for Rural and Agricultural Development* (Cardiff, University of Cardiff College Press).

Lucas, R. E. & Prescott, E. C. (1974) Equilibrium search and unemployment, *Journal of Economic Theory* 7, 188-209

Lugard, L. (1923) *The Dual Mandate in British Tropical Africa* (Edinburgh, Blackwood & Sons)

McFarlane, D. A. (2011) A Comparison of organizational structure and pedagogical approach: online versus-to-face *The Journal of Educators Online* 8 (1), 1-43.

Marshall, C. & Rossman, G. B. (1995) *Designing Qualitative Research* (Newbury Park, CA, Sage)

Massey, A. & Walford, G. (1998) Children learning: ethnographers learning studies, *Educational Ethnography* Vol. 1: 1-19

Matlay, H. (2001) Entrepreneurial and vocational education and training, *Central Eastern Europe Education & Training* vol. 43 ISS: 8-9 p.395-404

Mayo, P. (2004) *Liberating Praxis Paolo Freire's Legacy for Radical Education and Politics*, (West Port, CT, Praeger)

Mc an Ghail, M. (1995) Young Gifted and black: methodological reflections of a teacher researcher, In G. Walford (ed.), *Doing Educational Research* (London, Routledge) pp. 101-120

McGill, I. & Beaty, L. (1995) *Action Learning: A Practitioner's Guide* (2nded.) (London, Kogan Page).

McWilliam, H. O. (1975) *Development of Education in Ghana* (London, Longman).

Measor, L. & Woods, P. (1991) Breakthroughs and blockages in ethnographic research: contrasting experiences during the changing schools project. In G. Walford (ed.), *Doing Educational Research* (London, Routledge).

Measor, L. (1985) Interviewing: a strategy in qualitative research, In R. G. Burgess (ed.), *Strategies of Educational Research: Qualitative Methods* (London, The Falmer Press) pp. 55-77

Middleton, J.; Ziderman, A.; Van Adams, A (1993) *Skills for Productivity: Vocational Education and Training in Developing Countries*, New York: Oxford University Press

Miles, M. B. & Huberman, M. A. (1994) *Qualitative Data Analysis* (London, Sage Publishers)

MOE (1985) *Blueprint for JSS Implementation* Accra, Ministry of Education

MOE & Culture (1986) *The Educational Reforms Policy Guidelines on Basic Education* (Accra) pp.2-3

MOE (1986) *Education Commission Report on Basic Education*, Accra

MOE (1994) *Education Reforms Programme: Policy Guidelines on basic education*, Accra

MOE (1996) *Basic Education Sector Improvement Programme Policy Document: Free Compulsory Universal Basic Education by the Year 2005 (FCUBE)* (Accra, Ministry of Education)

MOE (1998) *FCUBE* (Accra, Ministry of Education)

MOE (1999) *Education Sector Strategic Plan 2000-2002* (Accra, Ministry of Education)

MOE (2000) *A Decade of Educational Reforms: Preparation for the Challenges of a New Millenium*, (Ministry of Education, Accra, National Education Forum)

MOE (2001) *The Challenges of a New Millenium* (Accra, Ministry of Education)

MOE (2002) *Meeting the Challenges of Education in the Twenty First Century: Report of the President's Committee on Review of Education Reforms in Ghana* Ministry of Education Accra

Moran, L. & Rumble, G. (2004) *Vocational Education and Training through Open and Distance Learning* (London, Routledge-Falmer)

Morrissey, O. (2001) Lessons for Africa from East Asian economic policy, In P. Lawrence & C. Thirtle (eds.) *Africa and Asia Comparative Perspective* (London, Palgrave Publishers).

Moumouni, A. (1968) *Education in Africa* (London, Andre Deutch)

Mulenga, D. C. (2004) *Postcolonialism and Education: Challenging Traditions and Disrupting Boundaries* (New York, Palgrave Macmillan).

N'tchougan-Sonou, C. H. (2000) *Values learned through formal education: a comparative study of Anglophone and Francophone Ewes in Ghana and Togo*, unpublished Doctoral Thesis, Oxford, University of Oxford

Naylor, R. (2000) *Ghana, An Oxfam Country Profile*

Nias, J. (1991) *Primary Teachers talking: a reflexive account of longitudinal research, In Walford, G. (ed.) Doing Educational Research* (London, Routledge).

Nimako, S. G. (1976) *Ghana Today 9: Education in Ghana 1930-1975* (Accra, Ghana Information Services Department)

Nisbet, J. & Watt, J. (1984) Case Study In J. Bell; T. Bush; A. Fox; J. Goodey & S. Goulding (eds.) *Conducting Small-Scale in Educational Management* (London, Harper & Row)

Nishimura, M. & Orodho, J. (1999) Education, vocational training and employment: designing projects that link education and vocational training and employment in Kenya *Japan International Co-operation Agency*, (Nairobi)

Nkrumah, K. (1968) *Dark Days in Ghana* (London, Panaf Books)

Noblit, G. W. & Hare, R. D. (1988) *Meta- Ethnography: Synthesizing qualitative Studies* (London, Sage)

Ntumi, R. A. (1983) *Attitudes of Primary School Children in Ghana: Family and School Determinants of Children's Attitudes, Research/Technical Report IDRC-MR72-E* (Ottawa, International Development Research Centre)

Nuffield Foundation and the Colonial Office (Britain) (1953) *African Education: A Study of Educational Policy and Practice in British Tropical Africa*, Oxford: Oxford University Press

Nwakoby, F. & Lewin, K. (1991) Vocationalising secondary education: a study of the junior secondary schooling innovation in Nigeria. In K. M. Lewin & J. S. Stuart, (eds.), *Educational Innovation in Developing Countries* (London, Macmillan).

O'Dwyer, L. M. Wang, Y. & Shields, K. (2015) Teaching for conceptual understanding: a cross-national comparison of the relationship between teachers' instructional practices and student achievement, *Mathematics Springer Open Journal* vol. 3: 1

Ocran, A. K. (1978) *Politics of the Sword, A Personal Memoir on Military Involvement in Ghana and Problems of Military Government* (London, Rex Collins).

Odaminten, S. K. (1995) *Indigenous Educational Ideas in Ghana* (Accra, GNAT)

ODI (1996) *Adjustment in Africa: Lessons from Ghana* (London, Overseas Development Institute)

Oketch, M. (2007) Education policy vocational training, and the youth in Sub-Saharan Africa, *WIDER Working Paper* No. 2014/069

Oketch, M. (2008) To vocationalise or not vocationalise? Perspectives of current trends and issues in technical and vocational education and training (TEVT) in Africa, *International Journal of Educational Development* 27 (2) 220-234

Onwuka, U. (1971) *Educational values and African development, unpublished Doctoral Thesis* London, University of London

Oppenheim, A. N. (1992) *Questionnaire Design, Interviewing and Attitude Measurement* (London, Pinter Publishers)

O'Reilly, K. (2009) *Key Concept in Ethnography* (London, Sage Publications Ltd)

Osei, G. M. (2003) Issues arising from an examination of the junior secondary school reform of 1987 in Ghana, *Educational Studies*, vol. 29, No. 2/3 141- 177

Osei, G. M. (2004) The 1987 junior secondary school reform in Ghana: vocational or pre-vocational in nature? *International Review of Education* 50 (5-6) 425-446

Osei, G. M. (2007) Vocationalising secondary education: the junior secondary schooling reform *Educational Review* 59 (1), 71-85

Parlett, M. & Hamilton, D. (1976) *Evaluation as Illumination: A New Approach to the Study of Innovatory Programs*, Occasional Paper no. 9 (Center for Research in the Educational Sciences University of Edinburgh)

Patton, Michael G. (1980) *Qualitative Evaluation Methods* (Beverly Hills, CA, Sage)

Peil, M. (1995) Ghanaian education as seen from an Accra suburb, *International Journal of Educational Development*, vol. 15 no. 3

Peil, M. (1996) Ghana's universities and their government: an ambiguous relationship, *Issue* 24, pp. 52-55

Pieterse, J. N. (2001) *Development Theory: Deconstructions/Reconstructions* (Thousand Oaks, CA, Sage Publications)

Pollard, A. (1985) Opportunities and difficulties of a teacher-ethnographer: a personal account, In R. Burgess (ed.), *Field Methods in the Study of Education* (London, Falmer)

Presidential Committee on Education (2002*) Meeting the Challenges of Education in the Twenty First Century: Report of the President's Committee on Education Reforms in Ghana* (Accra, Adwinsa Publications)

Pritchett, L. (2001) Where has all the education gone? *The World Bank Economic Review* vol.15 (3), 367-391

Pritchett, L. (2013) *Schooling Ain't Learning* (Washington, DC, Centre for Global Development)

Pritchett, L. (2015) *Creating Education Systems Coherent for Outcomes: Making the Transition from Schooling to Learning*, Research on Improving Systems of Education (RISE) Harvard Kennedy School and Centre for Global Development RISE-WP-151005

Pring, R. (1976) *Knowledge and Schooling* (Open Books Publishing)

Pring, R. (2000) *Philosophy of Educational Research* (London, Continuum)

Riddell, A. R. (1997) Assessing designs for school effectiveness and school improvement in developing countries, *Comparative Education Review* 41 (2): 178-205

Reese, S. S. (2014) Islam in Africa/Africans and Islam, *The Journal of African History* Vol. 55 (1):17-26

Riddell, A. R. (1999) The need for a multidisciplinary framework for analyzing educational reform in developing countries, *International Journal of educational Development* 19, 207-217

Republic of Ghana (1992) *Constitution of the Fourth Republic of Ghana*, Accra

Robinson, N. (1999) *Islam: A Concise Introduction*, (Curzon) pp. 36-39

Roger, E. M. & Shoemaker, F. F. (1971) *Communication of Innovations: A Cross-cultural Approach* (Collier, Macmillan)

Rolleston, C. & Oketch, M. (2008) Educational Expansion in Ghana: economic assumptions and expectations, *International Journal of Educational Development*, vol. 28 (3), 320-339

Rolleston, C. (2011) Educational access and poverty reduction: the case of Ghana 1991- 2006 *International Journal of Educational Development* vol. 31(4), 338-349

Rossman, G. B. & Rallis, S. F. (2012) *Learning in the Field: An Introduction to Qualitative Research* (Thousand Oaks, CA, Sage)

Rothstein, J. (2010) Teacher quality in educational production: tracking decay and student achievement, *The Quarterly Journal of Economics*

Rubin, H. J. & Rubin, I. S. (1995) *Qualitative Interviewing: The Art of Hearing Data* (Thousand Oaks, CA Sage)

Sakyi, K. A. (2012) Curriculum Reform of Secondary Education in Ghana, GhanaWeb (Accessed 05/01/2013)

Sakyi, K. A. (2015) *The Challenges of Ghana's Educational System – Some Reflections* Feature Article

Salifu, I. & Abenyega, J. S. (2013) Viewing teacher motivation in the Ghana education service through a postcolonial lens, *Current Issues in Education* vol.16 no. 3

Savage, M. B. R. (1998) Curriculum innovations and their impact on the teaching of science and technology, In P. Naidoo & M. Savage (eds.), *Science and Technology Education into the New Millennium: Policy and Priorities* (Kenwyn, Juta & Company)

Sawyerr, H. A. (1987) *Memorandum on Junior Secondary School in Ghana*, Accra

Scadding, H. (1989) Junior secondary schools – an educational initiative in Ghana, *Compare* 19 (1)

Scherer, R. & Beckmann, J. F. (2014) The acquisition of problem solving competence evidence from 41 countries that Math and Science education matters, *Springer Open Journal Large-Scale Assessment in Education* 2: 10

Seal, C. (2012) Managerial roles and implications in emerging change, *Organization Management Journal* 9, 3

Shattock, B. A. (1946) A criticism of educational policy in West Africa, *Overseas Education*, vol. xvii no. 3 p. 292

Silverman, D. (1970) *The Theory of Organisations* (Heinemann)

Silverman, D. (1987) *The Theory of Organisations* (Amazon)

Silverman, D. (2011) *Qualitative Research* (London, Sage Publications)

Simons, H. & Usher, R. (2000) Introduction: ethics in the practice of research, In H. Simons & R. Usher (eds.) *Situated Ethics in Educational Research* (London, Routledge Falmer Press)

Soares, B. (2014) The historiography of Islam in West Africa: an anthropologist's view, *The Journal of African History* vol. 55 (1): 27-36

Spio-Garbrah, E. (1999) *Statement on the state of the Educational System by the Minister of Education* (Accra, Ministry of Education)

Stake, R. E. (1995) *The Art of Case Study Research* (London, Sage Publications)

Stephens, D. (1991) The quality of primary education in developing countries: who defines and who decides? *Comparative Education* 27 (2): 223-233

Stephens, D. (2000) Girls and basic education in Ghana: a cultural enquiry, *International Journal of Educational Development* 20, 29-47

Strauss, A. & Corbin, J. (1990) *Basics of Qualitative Research: A Grounded Theory Procedures and Techniques (*London, Sage Publications)

Subrahmanian, R. & Beckmann, J. F. (2005) Gender equality in education: definitions and measurements, *International Journal of Educational Development* vol. 25 SPEC P. 395- 407

Sundkler, B. & Steel, C. (2000) *A History of the Church in Africa* (Cambridge, Cambridge University Press)

Sutherland-Addy, E. (2002) *Impact Assessment Study of the Girls Education in Ghana*, Accra (UNICEF-Ghana)

Sutherland-Addy, E. (2005) *Education Reforms and Goals in Ghana* Paper Presented at a Symposium, Accra

Wikipediaorg (2017) *List of Ghanaian High Schools*

Taba, H. (1962) *Curriculum Development: Theory and Practice* (Harcourt Brace, Jovanovich)

Tattum, D. & Herbert, G. (1990) *Bullying: A Positive Response, Advice for Parents, Governors and Staff* (Cardiff, Institute of Higher Education)

Taylor, M. J. (1996) Voicing their values, pupils' moral and cultural experiences, In J. M. Halstead, & M. J. Taylor (eds.), *Values in Education and Education in Values* (London, The Falmer Press)

Tettey-Enyo, A. (1998) *Revision and Approval of School Fees and Other Charges* GES/DD-G/005/Vol. III, (Accra, Ghana Education Service)

Tettey-Enyo, A. (1999) *Towards Sustaining an Effective National Education System* (Accra, Ministry of Education, National Education Forum)

The Statesman (1993) The New Education System and Problems, Accra: *The Statesman*

Thomas, G. (1998) The myth of rational research, *British Educational Research Journal* 24, 2: 141-161

Thompson, N. M. & Casely-Hayford, L. (2008) *The Financing and Outcomes of Education in Ghana,* RECOUP Working Paper No. 16 Oxford: RECOUP

Tibawi, A. L. (1979) *Islamic Education* (2nd edition) (London, Luzac)

Tikly, L. & Barrett, A. M. (2011) Social justice, capabilities and quality of education in low-income countries, *International Journal of Educational Development* vol. 31 pp. 3-14

Toye, J. (1987) *Dilemmas of Development* (Oxford, Blackwell)

Toye, J. (1991) Ghana, In A. Adepoju (ed.) *The Impact of Structural Adjustment on the Population,* (UNFPA/Heinemann)

Tye, B. B. (2000) *Hard Truths: Uncovering the Deep Structure of Schooling* (New York, Teachers College Press, Columbia University)

UNDP (1996) *Human Development Report* (New York, Oxford University Press)

UNDP (1997) *Ghana Human Development Report 1997* (Accra, United Nations Development Programme)

United Nations (2000) *World Economic and Social Survey 2000: Trends and Policies in the World Economy* (United Nations)

Ward Schofield, J. (1990) Increasing the generalisability of qualitative research, In E. W. Eisner & A. Perkin (eds.), *Qualitative Enquiry in Education: The Continuing Debate* (New York, Teachers College Press)

Whyte, W. F. (1955) *Street Corner Society: The Social Structure of an Italian Slum* (Chicago, University of Chicago)

Williams, P. (1986) African education under siege, In H. Hawes & P. Coombe (eds.) *Education Priorities and Aid Responses in Sub-Saharan Africa* (ODA University of London, Institute of Education)

Williams, T. D. (1964) Sir Gordon Guggisberg and education reform in the Gold Coast 1919-1927, *Comparative Education Review*

Williamson, B. (1979) *Education Social Structure and Development* (London, The MacMillan Press)

Wiltgen, R. M. (1956) *Gold Coast Mission History 1471-1880* (Techny III, Devine Word Publications)

Winch, P. (1970) Understanding a primitive society, In (Wilson1970). First published in *American Philosophical Quarterly* 1: 307-24, 1964

Wise, C. G. A. (1956) *A History of Education in West Africa* (London, Longmans Green)

Wolcott, H. (1995) *The Art of Fieldwork* (Walnut Creek, Alta Mira)

Woods, P. (1984) Teacher self and curriculum, In I. F. Goodson & S. J. Ball (eds.), *Defining the Curriculum: Histories and Ethnographies* (Lewes, Falmer)

Woods, P. (1987) Managing the primary school teachers' role. In S. Delamont (ed.) *The Primary School Teacher* (London, Routledge)

Woods, P. (1996) *Researching the Art of Teaching* (London, Routledge)

World Bank (1993) *Ghana 2000 and Beyond: Setting the Stage for Accelerated Growth and Poverty Reduction* (Washington, World Bank)

World Bank (1995a) *Ghana: Poverty Past, Present and Future*, Report no. 14504-GH (Washington DC, World Bank Population and Human Resources Division)

World Bank (1995b) *Ghana: Growth, Private Sector, and Poverty Reduction: A Country Economic Memorandum, May 1995*, (Washington, DC, World Bank)

World Bank (1998) *1998 World Development Indicators* (Washington DC, IBRD)

World Bank (1998/99) *World Development Report: Attacking Poverty* (Oxford University Press)

World Bank (2001) *World Development Report 2000/2001: Attacking Poverty* (Oxford University Press)

World Bank (2003) *Skills for Productivity: Vocational Education and Training in Developing Countries* (New York, Oxford University Press)

World Bank (2017) *Ghana: Growth, Private Sector, and Poverty Reduction: A Country Economic Memorandum* (Washington DC, World Bank)

World Development Indicators (2001) *World Development Indicators 2001*

World Development Indicators (2015) *World Development Indicators 2015*

World of Information (2000) *Africa Review 2000* (Walden Publishing)

Yin, R. K. & Heald, K. A. (1975) Using the case survey method to analyse policy studies, *Administrative Science Quarterly*, 20, 371-381.

Yin, R. K. (1989) *Case Study Research: Design and Methods* (London, Sage)

Yin, R. K. (1994) Designing single and multiple case studies, In N. Bennett; R. Glatter & R. Levacic (eds.) *Improving Educational Management Through Research and Consultancy*, (London, Paul Chapman)

Yusif, H. M. & Yussof, L. (2010) Practical review of recent trends in basic and secondary school enrolments in Ghana, *Journal of Science and Technology* vol. 30, no. 1, pp. 82-94

Zame, M. Y.; Hope, C. & Respress, T. (2008) Education reform in Ghana: the leadership challenge, *International Journal of Management* 22 (2) 115-128

Ziderman, A. (2003) *Financing Vocational Training to meet Policy Objectives: Sub-Saharan Africa* (African Region Human Development Series Washington, DC).

Appendices

Appendix 1: School Case Studies: Case study School Profile

Appendix 2: Survey of the Attitudes of Ghanaian JSS Pupils to their Schools

Appendix 3: Survey of the Teacher Attitudes to the Junior Secondary School in Ghana

Appendix 4: Questionnaire for Officials of the Ministry of Education, State Education Commission and Teacher Trainers

Appendix 5: Questionnaire for Principals and Teachers in Secondary Schools

Appendix 6: Questionnaire for Students

Appendix 7: Questionnaire for Parents/Guardians

Appendix 8: Interview Schedule; Researcher's Notes taken during Lesson

Appendix 9: Notes for Classroom Observation

Appendix 10: General Educational Statistics for Ghana

Appendix 11: The Curriculum of Schools: Primary, JSS and SSS

Appendix 12: The Educational Structure for ADPE (1951)

Appendix 13: New Structure of Education (Due to operate from September 1975)

Appendix 14: Proposed Structure of the Ghana Education Service-Headquarters

Appendix 15: Resource Provision/Co-ordination

Appendix 16: Responses on Conceptualisation of Continuous Assessment

Appendix 1

SCHOOL CASE STUDIES

CASE STUDY SCHOOL PROFILE: SISALA

Name of School: Sisala JSS Type: Co-ed
Town: Sisala: (Population: 331)
Site: Rural
Population 120 students: (12 teachers)
Year Established: 1987
Proprietorship: Ministry of Education
Date Visited: September 1999- January 2000 & September 2014- January 2015

School Atmosphere

The first impression as one comes upon the school from the winding farm road is ‘’how small it is”. There is not much ground around the school. There are two blocks of buildings and the second block not yet completed. My first visit on 5th September had been to deliver the questionnaires and fix an appointment for the study.

The headteacher granted me an interview on 12th September. My first question was to clear my confusion about the school because the records had shown that the school had been allocated equipment in the 1986-87 but now the evidence is that the school started only in the 1987-88 session. How possible?

The headteacher was amused and laughingly assured me that the school had the privilege of getting allocation for Introductory Technology equipment before it was even built because someone at the decision-making level in the MOE comes from the village, so they got the equipment. ‘’In fact’’ he elaborated, ‘’the workshop was built before the school existed – it was the first building to be erected.’’

> *Researcher’s Comment: A most intriguing situation indeed. What other criteria had been applied to equipment allocation? Perhaps the school might never have been thought of without the*

equipment – what a rationale for establishing a JS School. This surely shows how far communities would go to get a school. This JS School to me is actually not required because all along the way there are many other much older JS Schools that could adequately serve the whole area. No wonder the entire population is only 100. It seems to be just a village school.

I asked the headteacher how they recruit students and he said it is mainly from the village since there are other schools in the town.

How far have they been getting on with Introductory Technology then? I was surprised to hear that they had really not started. Why?

Headteacher: We had no teachers to handle the subject. It was only recently they sent us a Technical and Vocational teacher and he is teaching Introductory Technology as well.

When I asked permission to observe the class in session he explained that they were not doing any practical yet, primarily because they had no funds to buy materials to be used and secondly because there was no power source and the school had no generator. He was very concerned about the money situation, which he said was critical as headteachers were forced to pay in all the monies they collected to the sub-treasury in Tamale.

He later showed me round the school. Just behind the classroom block was the foundation of another building, which he said they could not continue with because the owners of the land refused to give it up. The workshop was indeed impressive, built to MOE specifications and well fortified. But as the headteacher explained, they had never used it. The equipment was still packed in their cartons but as he explained, the Technical/Vocational teacher and the students could now identify the contents of each carton; they took whatever they required for their lessons to the classroom.

I had wanted to talk to the Technical/Vocational teacher but was told he had travelled.

Interpretation

Although I had seen very little of the activities for which I had come, the story at Sisala JSS opened up one or two lines of possible future enquiry about the criteria for citing JS Schools and allocation of resources as well as the cost effectiveness of such

schools. Here obviously, in spite of the backing the school enjoyed from the MOE the level was very low in the implementation of the innovation.

CASE STUDY SCHOOL PROFILE: SUHUM

Name of School: Suhum JSS Type: Co-ed
Town: Suhum (Population 49,398)
Site: Urban
Population: 600 (22 teachers)
Year Established: 1983
Proprietorship: Private
Dates Visited: September 1999- January 2000 & September 2014- January 2015

School Atmosphere

The school is situated 4kms on the outskirts of Suhum town, which though among the old urban centres, remains noticeably rural around a very short radius from the town centre. The school has been built in large open grassland, bare of trees. It is a mixed school with the majority of the students coming from homes from around the community. The proprietor's quarters are far removed from the offices and classroom blocks of which there were three one-storey buildings, one large assembly hall, and an Introductory Technology workshop.

It was all-quiet in the harsh sun with no shade anywhere.

Researcher's comment: why can't some schools ever think of planting trees in their compounds?

I had first called at the District Education Service of the GES in Suhum to distribute questionnaires to the officers and had been told I could find them at workshop held at the Star of Suhum JSS. I found them in the assembly hall.

The workshop was on Introductory Technology organized by the MOE/GES with the District Director of Education as course organizer. The course was for all Introductory Technology teachers in Suhum district. There were over 25 of the teachers including women. All the MOE officers in Suhum district were at the high table on the podium.

I was surprised that the course was not held in the Introductory Technology workshop but in the hall. By the time I joined the lectures had ended and it was then question time. I had been struck by the total lack of equipment in this workshop.

Some of the questions from participants concerned:

- the relevance of Introductory Technology to girls;
- attitude of parents, students and teachers to the learning of vocational subjects in schools;
- relating teaching approach in Introductory Technology to utility or productivity;
- provision of equipment;
- in-service training programmes to enable HND/OND teachers to acquire professional teaching certificates;
- appeal for the allocation of broken down vehicles to schools for practice in auto-mechanics.

Eventually the headteacher managed to see me but handed me over to the guidance counsellor so he could go back to his guests. The guidance counsellor also taught Social Studies in the school at all levels. He undertook to administer the questionnaires and fixed a date for me to return for interviews and classroom observation.

On this second visit on the 12th the guidance counsellor had travelled. Nor was the headteacher in. I was directed to the Deputy headteacher who also was Head of the Mathematics Department. The Deputy headteacher could not tell me much about the JSS because he was not involved with them at all. He, however, arranged for me to return on another day, the 15th.

The school was obviously in turmoil on this day. I had run into chanting demonstrating school children in town on my way to the school. I soon learned that the report of an enquiry into the affairs of the school had recommended the transfer of the headteacher who had been in the school since it started, and the immediate assumption of office by a new headteacher.

I had to postpone my activities by which time the new headteacher was in the process of moving in. With so much upheaval I could not obtain any school records, nor could I really interview anybody under the circumstances. However, they managed to fix up another session for me on 20th to observe some lessons.

Still I managed to observe three classes in session.

3D – Social Studies (Notes taken during Lesson)

Title: The Primary Sector – Agriculture

The Problems of Agriculture in Ghana

These included:

1) Population Movement: rural-urban migration.

2) Antiquated implements.

3) Pressure on arable land by other development projects.

4) Natural forces on farm calendar i.e. effects of weather conditions.

5) Nature of land tenure

Possible Solution

a) Appeal for people to go back to land.

b) Supply of farm tools by government.

c) Government acquisition of land for agricultural purposes.

Researcher's Comment:

Teaching Method

Very much the same as in other schools observed – chalk-talk by teacher. There was hardly any contribution from students except to repeat what the teacher said whenever required doing so. Children were not guided into discussions. For example, there was no attempt to discuss why people migrate to urban areas before jumping into solution for urban migration. Similarly, the land tenure system should have generated much discussion about the system in Akan land but there was no opportunity for this.

The teacher tells the class that the government agricultural policies don't reach the farmers but these policies were never discussed. This is most surprising as most of these children come from farming homes and would have made meaningful contribution to the lesson. I observed a number of pupils near me sleeping.

2nd Lesson: Introductory Technology

Technical Drawing

By the time I was conducted to the workshop the lesson was almost ended. I, however, saw the work done by students. It was their first practical lesson on technical

drawing and they seemed to have done well. There was much excitement at having been able to accurately measure. The teacher was pleased and the pupils were hopeful of doing well in the JSS exams.

Researcher's comment: Too hopeful with only one lesson.

The school has a very well built workshop with benches. There were not enough drawing boards supplied by the Ministry – about 22 – so the pupils were asked to make theirs.

There is a store to keep most of the equipment supplied. The workshop also serves as a studio for fine arts.

General Comment

In all respects the problem-solving pattern in the school was not up to standard. The innovation was not evident as yet.

CASE STUDY SCHOOL PROFILE: ACHIMOTA (ACCRA)

Name of School: Achimota JSS Type: Co-ed.
Town: Achimota (Population 22,767); Accra (Population: 2.3 million)
Site: Urban
Population: 1220
Year Established: 1958
Proprietorship: Ministry of Education
No of Teachers: 42
Date Visited: September 1999- January 2000 & September 2014- January 2015

School Atmosphere

The impression one takes away from Achimota JSS, Achimota, Accra, is that of the realities of unequal resource distribution operating within the national system. In addition there is the perception of the school as the ideal to which all schools should aspire. Most things regarded as luxuries in the state schools are taken for granted at Achimota JSS. There is, for instance purpose built library block, not just a converted classroom with a hand full of book samples from publishers. The general impression of elitism is epitomized in the staff common room. This is a circular projecting off the administrative block with serrated roof, which makes it architecturally arresting. The hall is carpeted with enough comfortable chairs and tables for everyone. There are also lockers round the wall and news paper is supplied. Tea break is at 11.00 a.m. and tea is laid out in a giant tea-maker with cakes and biscuits from the Home Economics Department. This was incredible as tea had already become a scarce commodity in Ghana by this time. The headteacher is also down for tea but the atmosphere was very informal. Another striking impression was the ethnic diversity of the staff starting from the security men at the gate. There was a very friendly atmosphere in the staff room as non-Ga teachers practised Ga language to the amusement of all.

My first visit had been to meet the headteacher and arrange for interviews, administration of questionnaires and other activities in the school. I was alarmed at the

vehemence with which she refused to have anything to do with me asking me to find other people to talk to. This was a disposition in direct contrast to the friendliness in the staff-room where I had just had tea. I therefore had no more dealings with the headteacher in my subsequent visits. Some of the teachers I spoke to later told me that they have many researchers coming to their school and this might explain the headteacher's hostility.

Researcher's Comment: A- Does the headteacher feel threatened by the 'prying' of researchers or does she regard them simply as being tiresome? What of the teachers?

There was also an initial difficulty when I tried to get some of the teachers to administer my questionnaires. They would much rather that I approached each teacher myself. It was explained that staff there resented any imposition, which included the attempt by any member of staff to accept the responsibility of administering questionnaires on colleagues on behalf of anybody. If I wanted to get response from the school I would have to negotiate individually with the staff. This was in complete contradiction to my experience in the state schools where the headteacher or the deputy headteacher took responsibility to see that the questionnaires were distributed according to my directives.

Researcher's Comment: A+ Professional authority seems very much entrenched as each teacher maintains his authority very firmly.

This unexpected uncompromising attitude from Achimota JSS staff cost me about five visits in order to retrieve my questionnaires, a situation that would have had serious consequences for me in terms of time had teachers in other schools held similar strong feelings about their rights and dignity.

The general impression in Achimota JSS is undoubtedly that of well-being, self-sufficiency and confidence among the staff, which is confirmed by the students when I spoke with them later on.

Vocational Curriculum:

Achimota JSS had two deputy headteachers, one in charge of administration and the other of Studies. The deputy headteacher available at the time of my visit was in charge of administration and he was most welcoming.

When I asked him what he thought of the JSS curriculum, whether he considered the change necessary, he answered that the time was auspicious for "technological take-off in the country. Now that our economy is in trouble we should do everything to correct what has brought the problem to the country. Now if people were to be trained in technology they will manage to find themselves something to do. That is why I support the new curriculum."

In answer to my question about what progress had been made in implementing the new curriculum, especially the vocational subjects, in the school, the deputy headteacher assured me that the school is doing very well indeed. They have a very strong fine arts unit equipped with a printing press, so the students have started learning printing and photography as well which means that the school bulletins, annual reports and cards are produced in the school. As soon as the computers ordered from abroad arrive, the school hopes to introduce Computer Studies as well. Technical Drawing and Home Economics are not new in the school and have always been done by students of both sexes. The school is lucky to possess one of the Introductory Technology workshops set up as models by the contracting companies from whom the Government had ordered equipment for the vocational curriculum. There are two separate workshops in the same block. One is for wood and metal work while the other has the auto-mechanic, electronics and building technology.

There are two permanent teachers for Introductory Technology and both hold the B.Ed. degree in Industrial Technology, which makes them ideal for the subject. The teachers were very enthusiastic about their subjects and have had to work long hours in order to cover the syllabus, which had been obtained only towards the end of 1988 from GES in Accra. They come back at 4.00 p.m. and work till 6.00 p.m. with the JSS 3 students. Because of time factor they had left out auto-mechanics concentrating on wood and metal work. The students' work was going to be exhibited at the Speech and Prize

Giving Day to which I was invited. Both boys and girls are equally involved in all the subjects.

Researcher's Comment: It is surprising that Achimota JSS had nót had the syllabus earlier from Accra. This means that even at national level the syllabus was not ready.

The head of department told me that because of the age of the children, as the labour laws forbid children under 15 from using dangerous industrial machines, they have to get written permission from parents to allow the children to use the workshop machines.

Researcher's Comment: C+ Information and involvement of parents in schoolwork.

Continuous Assessment

The deputy headteacher had no doubt whatever about the readiness of the students to face the JSS examination. When I asked him what the rate of transition to senior secondary would be and how the school planned to decide who does what he answered:

''There is really no problem there as far as this school is concerned. The students are ready for the exam and being the calibre of students they are we do not expect anything less than 99% transition into senior secondary.''

Researcher's Comment: What implication for infrastructure here? Who does what i.e. who goes where? Does it mean the trade/vocational centres and teacher training colleges are stuck with less able candidates while all elite and able students go into senior secondary? It is obvious here that senior secondary –that is, more education – remains the higher status activity compared with the other options.

Appendix 2

PILOT SURVEY OF THE ATTITUDES OF GHANAIAN JSS PUPILS TO THEIR SCHOOLS

This is NOT a test

All your answers will be secret. Nobody will ever know how you have answered.

Section 1: Some facts about you

1. Name of your School ----------

2. Are you a girl or a boy? **GIRL** **BOY** (Circle correct answer)

3. In what school year are you? JSS 1 2 3

4. What is your age? Years ------ Months ------

5. How do you find schoolwork? Circle the word you think best describes the way you feel about your work:
Very Easy Easy Average Difficult Very Difficult

Section II: What do you think about your school?
Look at the statements below
Please read each one and then see whether you agree or not with what has been said.
When you have decided, circle the number in the column that is closest to what you feel,

for example:

	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
a) I like watching television	1	2	3	4	5
b) I like rainy days	1	2	3	4	5

a) "I have circled the number 5 in the Strongly Agree column because I like watching television very much"

b) "I have circled the number 2 in the Disagree column to show I usually dislike rainy days"

Statements	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
6. I am very happy when I am at school	1	2	3	4	5
7. Homework helps me to do well at school	1	2	3	4	5
8. What I learn at school will not help me get a job	1	2	3	4	5
9. School helps me to do well in exams, like JSS Leaving Certificate	1	2	3	4	5
10. Most of the time I don't want to go to school	1	2	3	4	5
11. I like keeping a record of what I do well in my Record of Achievement folder	1	2	3	4	5
12. My Record of Achievement will not be of any use when I want a job	1	2	3	4	5
13. My parents think it is important for me to do well at school	1	2	3	4	5
14. My family expect me to behave well at school	1	2	3	4	5
15. I do not like lessons where I have to solve problems	1	2	3	4	5
16. I do not like lessons where I have to work in groups with others	1	2	3	4	5

What do you think about the curriculum ?

Statements	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
17. I do not like English	1	2	3	4	5
18. I like a Ghanaian Language	1	2	3	4	5
19. I like French	1	2	3	4	5
20. I do not like Mathematics	1	2	3	4	5
21. I like Social Studies	1	2	3	4	5
22. I like Physical Education	1	2	3	4	5
23. I like General Science	1	2	3	4	5
24. I do not like Metal work	1	2	3	4	5
25. I like Wood work	1	2	3	4	5
26. I like Technical Drawing	1	2	3	4	5
27. I do not like Cultural Studies	1	2	3	4	5
28. I like Agricultural Science	1	2	3	4	5
29. I like Home Science	1	2	3	4	5
30. I do not like Crafts	1	2	3	4	5
31. I like Automobile practice	1	2	3	4	5
32. I like Masonry	1	2	3	4	5
33. I like Commercial subjects	1	2	3	4	5
34. I do not like Beauty culture	1	2	3	4	5
35. I like Marine Science	1	2	3	4	5
36. I like Pottery	1	2	3	4	5

Answer the following questions by filling in the spaces provided:

37. Will you take the full JSS Leaving Certificate Examination ?

Yes ——— No ———

38. If no, then would you have preferred to leave school at 12 years old ? ———————

39. What do you think are the best aspects of the JSS curriculum ? ———————

40. Would you like to make any changes to the JSS curriculum ?

If so, what are they ? ———————

41. Do you think that what you are learning in school will help you to get a job ?

If so, why ? ———————

42. Please add any further comments that you may have on the JSS ———————

Thank you very much for taking the time to complete these questions.

PILOT SURVEY OF TEACHER ATTITUDES TO THE JUNIOR SECONDARY SCHOOL IN GHANA

I would be very grateful if you would spend a little time completing this questionnaire.

The information is completely confidential but will be of great use to me as part of my D.Phil. research.

Put "X" in the appropriate box as it relates to you in each item.
Please do not write in margin.

(A) **Part One**

(Background info.)

1. Sex :
   - Male ☐
   - Female ☐

2. Age:
   - Under 20 years ☐
   - 20 - 25 years ☐
   - 26 - 35 years ☐
   - 36 - 40 years ☐
   - 41 years and over ☐

3. Highest Educational Qualification achieved:
   - Specialist/Diplomate ☐
   - Post-sec. Cert. "A" ☐
   - 4 - year Cert. "A" ☐
   - Cert. "B" ☐
   - Secondary untrained Teacher ☐
   - Middle untrained Teacher ☐
   - Other ----------

4. Teaching Experience:
   - Under 1 year ☐
   - 1 - 2 years ☐
   - 3 - 5 years ☐
   - 5 - 10 years ☐
   - Above 10 years ☐

5. In which types of school have you taught ?
   - Primary ☐
   - Middle ☐ (Tick as many as applicable)
   - Middle/Continuation ☐
   - Junior secondary ☐

6. Your type of school location:
   - Rural ☐
   - Urban/Municipal ☐

7. Your Region of origin (enter one) ———————————————————————

Greater Accra

Ashanti

Brong Ahafo

Central

Eastern

Northern

Upper East

Upper West

Volta

Western

Other

8. Are you a foreign national?

Yes ---- No ----

If yes, what is your nationality? ———————————————————————

9. Did you receive any part of your education outside Ghana?

Yes --- No ---

If yes, where? At what level? ———————————————————————

———————————————————————

10. Have you taught outside Ghana?

Yes ---- No ----

If yes, where? At what level? ———————————————————————

———————————————————————

(B) **Part Two**

I. Your views on curriculum and employment

This section is to afford you the opportunity to express your views about the relevance of the junior secondary school (JSS) curriculum to the skills required in occupations available in Ghana.
Each of the statements is to be marked on a five-point scale against it.

5 = Strongly Agree
4 = Agree
3 = Not Sure (I don't know)
2 = Disagree
1 = Strongly Disagree
For example:

The JSS curriculum has relevance to employment prospects	5	4	3	2	1
		X			

In each item, mark "X" in the square that expresses your best view.

	5	4	3	2	1
11. Pupils who go direct from JSS into employment have better prospects for advancement than those who remain in school or college.					
12. The teacher who is familiar with what goes on in Ghanaian industries is making a more valuable contribution than the one who does not.					
13. Pupils who acquire job skills through experience on the job get promoted less than pupils who have JSS experience.					
14. Industrial employment is appropriate for the JSS leavers who are unable to go on to senior secondary school.					
15. The present official syllabus is more relevant to pupils who go on to higher secondary education after completing the JSS, rather than to those who do not.					
16. I think the JSS syllabus is acceptable the way it is.					
17. Pupils should be fully responsible for their own learning					
18. If I were given the chance, I would reframe the JSS syllabus.					

If you have graded your answer 4 or 5 then what, would you change ?_____

_____

_____

_____

II. Your views on the role of the JSS teacher

	5	4	3	2	1
19. The main task of the teacher is to explain and communicate course content.					
20. Education is the business of teachers not parents.					
21. The role of the teacher includes advising on suitable careers.					

III. Your views on the JSS reform and its implementation

This section is to give you the opportunity to express your views about the introduction of the JSS, and its progress.
Please, answer the following questions by filling in the spaces provided.

22. Do you understand the purpose of the JSS Leaving Certificate ?
Yes ——— No ——— Uncertain ———

23. Do you support its introduction into your school ?
Yes ——— No ——— Uncertain ———
Give reasons ———

_____

_____

_____

24. How does the introduction of the JSS affect your professional future ?
Enhance ——— Detract ——— No Impact ———
Why ———

_____

_____

_____

25. Did you need additional training to prepare for the JSS syllabus ?
More Training ——— Introduction Only ——— No Training ———

26. Did you have knowledge of the JSS at the time of its implementation ?
Yes ——— No ———
If yes, where did you learn about the JSS ? ———

_____

27. Did you teach a JSS subject before ?

Yes —— No ——

If yes, what subjects have you taught and where ? ——————————

——————————

——————————

28. I am enthusiastic about participating in the JSS programme

Strongly Agree ——

Agree ——— (Please tick one)

Uncertain ———

Disagree ———

Strongly Disagree ———

29. What do you think are the best aspects of the JSS curriculum ?

——————————

——————————

——————————

——————————

30. Do you have any concerns about the JSS curriculum ? If so, please state: ——————

——————————

——————————

——————————

——————————

——————

31. How do you believe a JSS student (in comparison with equivalent students of the former education system) would be viewed academically by:

a) An employer in Ghana — better ——— same —— worse ———

b) An employer in another West African country — better ——— same —— worse ———

c) Headteacher of senior secondary school in Ghana — better —— same —— worse ———

d) Headteacher of senior secondary school from other West African countries — better ——— same —— worse ———

32. What aspects, if any, of the JSS do you believe are better than the education formerly available to this age group ? ——————————

——————————

——————————

33. What aspects, if any, of the JSS do you believe are worse than the education formerly available to this age group ?

34. How did the implementation of the JSS sector affect your school ?

35. Please add any further comments that you may have concerning the JSS

Thank you very much for taking the time to fill out this questionnaire

Appendix 4

QUESTIONNAIRE FOR OFFICIALS OF THE MINISTRY OF EDUCATION, STATE EDUCATION COMMISSION AND TEACHER TRAINERS

SECTION ONE: PERSONAL DATA

1. Name of Department /Institution where you work
   _____
2. Present rank: _____
3. What exactly are your duties in the office?
   _____
   _____
4. Sex (Please Tick box that applies)

(i) Male ☐ (ii) Female ☐

5. Age (In Numbers) _____

6. Educational qualification obtained (tick appropriate box(es))

- ☐ (i) WASC/GEC O-LEVEL
- ☐ (ii) HSC/GEC A-LEVEL
- ☐ (iii) Teachers Cert. 'A'
- ☐ (iv) Teachers Cert. 'A' (Post-Secondary)
- ☐ (v) OND
- ☐ (vi) BA/BSc
- ☐ (vii) BEd/PGDE
- ☐ (viii) MA/MSc/PhD

(ix) Any other (please specify)

---

7. Subject areas of specialisation

SECTION TWO: INTERPRETATION OF THE PROVISIONS OF THE NEW NATIONAL POLICY ON EDUCATION FOR THE JUNIOR SECONDARY SCHOOL (JSS) LEVEL

Objectives of the Junior Secondary School (JSS)

8. From your understanding of the provisions of the new national policy on education how far would you agree that the statements below adequately interpret the objectives of the policy with regard to the junior secondary level? (Tick the box that most agrees with your views about each statement) The purpose of the junior secondary School (JSS) is: -

		Strongly Agree	Agree	Disagree	Not Sure
(i)	To teach children so that they can learn manual skills for which they can be employed at the end of the 3-year course				
(ii)	To give those children who cannot carry on academically the chance to go out and find other things to do				
(iii)	To enable teachers to identify quite early children capable of higher level of academic studies in order to give them all the support they need				
(iv)	To expose children equally to vocational and academic subjects so that they have a wider range of choice of the things to do at the end of JSS				
(v)	To make children technically skilled and ready for self-employment after JSS				
(vi)	To introduce children to different kinds of jobs and the basic skills needed for further training in the jobs				

Objectives of Continuous Assessment

9. Consider the following statement and indicate with a tick the ( ) the boxes which correctly represent your interpretation of the objectives of continuous assessment as specified by the official policy.

		Strongly Agree	Agree	Dis-Agree	Not Sure
(i)	Continuous assessment is meant to help the child and his sponsors discover his abilities through reports of constant monitoring by his teachers				
(ii)	The idea of Continuous assessment is to separate children who will pursue vocational subjects from those who will continue with academic ones				
(iii)	The objective of continuous assessment is to ensure that children are working hard all the time				
(iv)	Continuous assessment is to ensure that Teachers are working hard all the time				
(v)	Continuous assessment is intended to offer the fairest method for judging a child's capabilities at all times in all school activities				
(vi)	Continuous assessment is meant to help teachers identity inadequacies in their teaching for correction and improvement				

(vii) Any additional Views

_____

SECTION THREE: CURRICULUM IMPLEMENTATION

10. Several activities have been planned and executed specifically for implementing the new secondary school curriculum. In the list of activities below indicate which you participated in and the level of years of your involvement. Before you start please study the example below:

	Year at School/ Institutional Level	Year at LGA/ Zonal Level	Year at Regional Level	Year at National Level
- Membership of Implementation Committee	1988	-	-	1982
- Writing of scheme of work	1990	-	-	-
- Design of continuous assessment instrument	-	-	1988	-
- Participation at Workshops /Conferences	-	1989	-	1987

You can now start:

(i)	Membership of implementation committee			
(ii)	Member of Curriculum review/design writing panel			
(iii)	Syllabus design/writing			
(iv)	Writing of scheme of work			
(v)	Drawing up of school timetable			
(vi)	Resource Planning for the new curriculum			
(vii)	Review and selection of the text books for the JSS			
(viii)	Design and production of learning materials for JSS			
(ix)	Design and production of continuous assessment instrument			
(x)	Design and production of guidance and counselling mats			
(xi)	Equipment production and distribution			
(xii)	Workshop supervision and equipment Maintenance			
(xiii)	Organisation of in service/orientation courses for teachers			
(xiv)	Participation meetings/conferences/ seminars/workshops on			

aspects of the new education system

(xv) Any other activities please specify_____
_____

Provision of Infrastructure

11. From your personal experience so far how would you assess the provision of **I**nfrastructure for the implementation of the new vocational curriculum at junior secondary level with regard to groups of resources listed below?

	Satisfactory	Not Satisfactory
(i) Equipment		
Amount		
Suitability of make		
Scope of utilisation (applicability)		
(ii) Workshops		
Number		
Utilisation by school		
(iii) Teaching Materials		
Quantity		
Type of Usability		
Funds: Amount		
Nature of provision (timing and channel of provision)		
Staffing: -		
Staff strength		
Level and nature of training		
Competence in interpreting/using syllabus		
Competence in constructing assessment instruments		
Competence in using assessment forms		
Competence in guidance and counselling		
Competence in operating equipment		
Readiness in accepting/adapting to new teaching methods		

The School, the Vocational Curriculum and the World of Work

12. The following organisations form part of the employment/labour sector of the economy: government ministries and corporations such as GEPA, Water Board, Housing Authority, ITF

the railway and airways, private companies, like the banks, manufacturing industries and commercial houses of all kinds and also the self-employed farmer, master-craftsmen and artisans. In planning and implementing the new vocational secondary school curriculum, has your office ever involved any of these potential employers in providing services for schools in such areas as:

	Response		Name of organisation where involved
	Yes	No	
1. Syllabus/scheme of work design and writing			
2. Part time teaching in schools			
3. Career guidance and counselling for students			
4. Supervision/monitoring of practical work in schools			
5. Equipment provision/loan/maintenance for schools			
6. School visit and information service			
7. Skill Training for teachers			
8. Funding for Vocational subject			
9.Membership of advisory committee on implementation of vocational subjects			

10. Any other activity please specify _____

_____

_____

13. Consider the provisions of the old 5-year secondary school and the newly introduced junior and senior secondary school programme. Now read through the statements below. Indicate with a tick the one box which most agrees with your judgment of the secondary system. Tick only ONE box.

(i). The JSS 3-year course with vocationalised

curriculum should continue as it has been planned

(ii). There was nothing very much wrong with the old 5-year secondary school with academic curriculum. We should go back to that system

(iii). Secondary education should revert to 5 years but with its curriculum adjusted to include optional vocational subjects

(iv). Secondary education should be continuous for 6 full years with vocational subjects made compulsory for the first three years only

(v). Vocational schools should be kept separated from academic secondary schools with the training periods planned to suit the needs of each course.

If you have any further comments or suggestions to make about the implementation of vocational curriculum in the junior secondary school, please use the space provided below

_____
_____
_____
_____
_____
_____

Thank you for your co-operation in patiently expressing your views on the various issues raised in this questionnaire.

Accra, October 2014 G. M. Osei

Appendix 5

QUESIONNAIRE FOR PRINCIPALS AND TEACHERS IN SECONDARY SCHOOLS

SECTION ONE: PERSONAL DATA

NB Please put a tick in appropriate boxes wherever applicable.

1. Sex: --

Male	
Female	

2. Age (in numbers) _____

3. Present rank_____

4. Subjects now taught by you

1. _____

2. _____

3._____

4._____

5. Classes now taught by you:

1._____
2._____
3._____
4._____
5._____
6._____

6. Number of hours engaged actively teaching per week:

_____

7. Non-teaching responsibilities you now hold in school:
   1._____
   2._____

3._____
4._____

8. Number of hours engaged in activities listed in Question 7 above:
   _____

9. Educational qualifications:
   (i) WASC/GCE O-Level
   (ii) HSC/GCE A-Level
   (iii) Teachers Cert. 'A'
   (iv) Teachers Cert. 'A' (Post-Secondary)
   (v) OND
   (vi) BA/BSc
   (vii) B.Ed./PGDE
   (viii) MA, MSc, PhD
   (ix) Any other please specify
   _____
   _____

10. Subject area of specialisation:
    _____
    _____

SECTION TWO INTERPRETATION OF THE PROVISIONS OF THE NEW POLICY ON EDUCATION FOR THE JUNIOR SECONDARY SCHOOL (JSS) LEVEL

Objectives of the junior Secondary school (JSS)

11. From your understanding of the provisions of the new National Policy on Education how far would you agree that the statements below adequately interpret the

objectives of the Policy with regard to the junior secondary level? (Tick the box that most agrees with your views about each statement).

The purpose of the Junior Secondary is:

		Strongly agree	Agree	Disagree	Not Sure
(i)	To teach children so that they can learn manual skills for which they can be employed at the end of the 3-year course				
(ii)	To give those children who can-not carry on academically the chance to go out and find other things to do				
(iii)	To enable teachers identity quite early children capable of higher level of academic studies to give them all the support they need				
(iv)	To expose children equally to vocational and academic subjects so that they have a wider range of choice of things to do at the end of JSS				
(v)	To make children technically skilled and ready for self-employment after JSS				
(vi)	To introduce children to different kinds of jobs and the basic skills necessary for further training in the jobs				

Objectives for Continuous Assessment

12. Consider the following statements and indicate with a tick. ( ) the boxes that correctly interpret your understanding of the objectives of continuous assessment as provided by the official policy

	Strongly Agree	Agree	Disagree	Not Sure
(i) Continuous assessment is meant to help the child and his sponsors discover his abilities through report of constant monitoring by his teachers				
(ii) The idea of continuous assessment is to separate children who will pursue vocational subjects from those who will continue with academic ones				
(iii) The objective of continuous assessment is to ensure that children are working hard all the time				
(iv) Continuous assessment is used to ensure that teachers are working hard all the time				
(v) Continuous assessment is intended to offer the fairest method for judging a child's capabilities at all times in all school activities				
(vi) Continuous assessment is meant to help teachers identify inadequacies in their teaching for constant correction and improvement				

13. Have you any additional views not covered in 12 above?
    Please use the space below

_____
_____
_____
_____
_____
_____
_____
_____
_____

SECTION THREE: CURRICULUM IMPLEMENTATION

14. Several conferences, seminars and workshops were organised on the implementation of the new curriculum. Would you please indicate the year of your participations and at what level? See example below:

	Year Involved At School Institutional Level	Year Involved At LGA Zonal Level	Year at Regional Level	Year at National Level
Participation at workshops/ conferences				

15. Have any government departments or private companies (e.g. banks, media houses motor industries, professional bodies, GEPA, ITF, other government ministries excluding education, etc.) been involved in any of the following curriculum implementation activities in your school?

		Response		Name of organisation where involved
		Yes	No	
(i)	Career guidance and counselling			
(ii)	Part-time teaching in the school			
(iii)	Syllabus/scheme of work design and writing			
(iv)	Funding for Vocational Subjects			
(v)	Monitoring/ supervision of practical work in school			
(vi)	Equipment provision/ loan/ maintenance			
(vii)	School visit and Information service			
(viii)	Skill training for teachers			
(ix)	Development of assessment instruments			
(x)	Membership of advisory committee on implementation of vocational curriculum in school			

Provision of Infrastructure:

16. From your personal experience so far how would you assess the provision of infrastructure for the implementation of the new secondary education system in your school with regard to the groups of resources listed below?

	Satisfactory	Not Satisfactory
(i) Equipment		
Number		
Suitability of make		
Scope for Utilisation (applicability)		
(ii) Workshops		
Number		
Utilisation by school		
(iii) Teaching Materials:		
Quantity		
Type (Usability)		
(iv) Funds:		
Quantity		
Nature of provision (timing and channel of provision		
(v) STAFF:		
Staff strength		
Level and nature of training		
Competence in interpreting/using syllabus		
Competence in making and using scheme of work		
Competence in constructing assessment instruments		
Competence in using assessment forms		
Competence in guidance and counselling		
Competence in operating equipment		
Readiness in accepting/adapting to new teaching methods		

JSS STRUCTURE

17. Consider the provisions of the old 5-year secondary school and the newly introduced junior and senior secondary school programme. Now read through the statement below and indicate with a tick the one box which most agrees with your judgement of our secondary school system.

    Remember, tick only one box:

    (i) The JSS 3-year course with vocationalised curriculum should continue as it has been planned. ☐

    (ii) There was nothing very much wrong with the old 5-year secondary school with academic curriculum. We should go back to that system. ☐

    (iii) Secondary education should revert to 5 years but with its curriculum adjusted to include optional vocational subjects. ☐

    (iv) Secondary education should be continuous for 6 full years with vocational subjects. made compulsory for the first 3 years only. ☐

    (v) Vocational schools should be kept separated from academic secondary schools with the training periods planned to suit the needs of each course. ☐

18. If you have any further comments or suggestions to make about the implementation of vocational curriculum in the junior secondary school, please use the space provided below:

_____

_____

Thank you very much for your co-operation in patiently expressing your views on the various issues raised in this Questionnaire

Accra, October 2014 G. M. Osei

Appendix 6

QUESTIONNAIRE FOR STUDENTS

SECTION ONE: PERSONAL DATA

1. Age last birthday (put a tick ( ) in the box against the figures below that apply to you):

(i) Below 10 ☐

(ii) 10 – 12 ☐

(iii) 13 - 15 ☐

(iv) 16 and over ☐

2. Sex (i) Male ☐

(ii) Female ☐

3. Education of Parents or Guardian: in the boxes provided below tick the highest level of education reached by each of your parents and/or guardian where applicable:

1. Primary Education
2. Secondary Education
3. Teacher Training
4. Technical/Vocational education
5. College of Education
6. College of technology
7. University
8. No formal Education
9. I Don't know

Father	Mother	Guardian

The following examples describe different kinds of work people do:

My guardian is an artisan in the Ghanaian Railway Corporation.

Kofi's mother is a fish trader at the market.

My father is a cocoa farmer.

Ama's sister is an accountant at the bank.

Mensah's brother is a Mathematics lecturer at the university.

Using the same examples answer the following questions:

(i) What work does your father do?

_____
_____
_____

(ii) What work does your mother do?

_____
_____
_____

(iii) What work does your guardian do (if applicable)?

_____
_____
_____

If your parents or guardian are retired, what work did they do before retirement (Do not answer this if they are still working.)

_____
_____
_____

(i) Father _____
(ii) Mother_____
(iii) Guardian_____

SECTION TWO: UNDERSTANDING OF THE NEW SECONDARY SCHOOL SYSTEM

The Government of Ghana introduced a new form of secondary education which will teach new subjects and have new ways of examining students. People got to know about this new school change in different ways.

The suggestions below may help to explain how you got to know about this change in the secondary school. Read the following statements and tick x in box that applies to each:

	Yes	No
1. The Principal spoke to students about the new Secondary School system		
2. The Class/House Master told us about it		
3. The Guidance counsellor explained the new system to students		
4. Students discuss/debate the new system among themselves		
5. The new system was taught during class lessons		
6. My parents/guardian explained it to me		
7. I heard it discussed on the radio and television		
8. I read about it in the newspapers		
9. Education officials visited the school to talk to students about the new secondary school system		

1. The statements below show what people think about the purposes of junior secondary school. Would you agree with these statements? (Tick the box that applies most to each statement)

		Agree	Disagree	Don't Agree
(i)	The purpose of the junior secondary school is to teach all secondary school children how to use their hands for making useful things			
(ii)	The purpose of the JSS is to help teachers send away from school those children who cannot cope with serious school learning so that more attention can be given to preparing the intelligent ones for higher studies			
(iii)	The purpose of the JSS is to give every school child some ideas to help him understand how simple machines work and how to use simple tools.			
(iv)	The purpose of the JSS is to give children the practical training that will help anyone start his own business or get a job after the 3-year course if he wishes to do so			
(v)	The purpose of the JSS is to encourage children to develop equal interest in learning vocational (practical)as well as academic subjects			

There are different ideas about what the new examination system called continuous assessment should be doing. Would you agree with the following statements about the purpose of continuous assessment?

(Tick the box that agrees most with your opinion)

		Agree	Disagree	Don't Agree
(i)	The purpose of continuous assessment is to separate children who will pursue vocational (practical) training from those who will carry on with academic studies			
(ii)	The purpose of continuous assessment is to make sure that the children are working hard all the time.			
(iii)	The purpose of continuous assessment is to point out a child's real abilities by showing how well he is doing in every school subject all the time he is in school			
(iv)	The purpose of continuous assessment is to make sure that teachers are working hard all the time			
(v)	The purpose of continuous assessment is to help teachers find out where they are having difficulties with their teaching so that they can make corrections and improve their teaching			

CAREER AWARENESS AND CAREER CHOICE

10. By June 1990 you will be completing 3rd year in the junior secondary. You must have been thinking of what to do afterwards. Below are a number of possible things to do. Study the list and select three activities that you find suitable. Indicate the order of your preference by writing 1st 2nd 3rd in the boxes opposite the three activities you have chosen:

(i) Find myself a job ☐

(ii) Establish a business of my own ☐

(iii) Continue to senior secondary ☐

(iv) Go to trade /vocational centre for more training ☐

(v) Go for apprenticeship with local master-craftsman ☐

(vi) Go into teacher training college ☐

(vii) Go into a technical college ☐

(viii) Any other (say exactly what)

_____

_____

_____

_____

11. Name two jobs you would most like to do when you grow up. Write them out in order of preference:
    1st choice _____
    2nd choice _____
12. From what you know of vocational and academic subjects, continuous assessment and guidance and counselling, would you like the junior secondary school programme to continue?

Yes ☐

No ☐

13. If No, what other kind of secondary school programme would you suggest? Write in the lines below:

_____
_____
_____
_____
_____

Thank you very much for patiently answering all my questions.

Accra, October 2014 G. M. Osei

Appendix 7

QUESTIONAIRE FOR PARENTS/GUARDIANS

SECTION ONE: PERSONAL DATA:

Please put a tick ( ) in boxes that apply wherever it is so indicated.

1: Name (Optional)_____

2: Sex: Male _____

Female _____

3: Age (in numbers) _____

4: Your educational level: Tick box showing the highest level of education you reached:

(i) No formal education ☐
(ii) Did not complete primary ☐
(iii) Completed Primary ☐
(iv) Did not complete secondary ☐
(v) Completed secondary ☐
(vi) Attended vocational/trade centre ☐
(vii) Attended Technical College ☐
(viii) Attended Teacher Training College ☐
(ix) Attended College of Technology/Polytechnic ☐
(x) Attended College of Education ☐

(xi) Any other educational experiences (specify)

_____

_____

_____

5. Occupational Status: (tick the box that applies)

(i) Employed ☐
(ii) Unemployed ☐
(iii) Self- Employed ☐
(iv) Retired ☐

6. If Employed:

(i) what is your rank?

(ii) what kind of work do you exactly do?

7. If unemployed:

What kind of work exactly are you seeking?

_____

8. If self- Employed:

What type of business do you exactly do?

_____

9. If Retired:

(i) what position did you last hold?

_____

(ii) what kind of work were you exactly doing?

_____

(ii) what kind of work are you engaged in now? If any?

SECTION TWO: UNDERSTANDING OF THE PROVISIONS OF THE NEW POLICY ON EDUCATION

10. Are you aware that there is a new rational policy on education in Ghana which has introduced more subjects and increased the time spent in secondary school? Tick the box that applies:

Yes _____

No _____

11. How did you get to know about the new policy on education? Tick the box(es) that apply(ies):

(i) Through announcements/ circular letter from Ministry of Education	
(ii) Through letters from School Principals	
(iii) Through Parents/Teachers Association meetings	
(iv) At town Union/Community Development meetings	
(v)Through newspaper publications	
(vi)Through radio/television discussions	
(vii) Through colleagues and friends	
(viii)Through the children	
(ix) By reading the new policy document	

12. Do you feel that you have understood the aims of the new policy on education?

Yes	
No	

If yes, list 3 AIMS you think the educational policy is meant to achieve:

(i) _____

(ii) _____

(iii) _____

17. Would you consider these aims as having been well thought out?

Yes	☐
No	☐

SECTION THREE: CAREER AWARENESS AND PREFRENCE

13. Look at the list of activities below. If you had a free hand to choose what your child would do after the junior secondary which three activities would you choose for him/her in order of importance (1 for first, 2 for second 3 for third). Remember choosing only three activities:

(i) Help him establish a business of his own

(ii) Find him employment anywhere

(iii)Send him to a vocational or trade centre for skill training in a particular trade

(iv) Send him to a local craftsman/artisan for an apprenticeship

(v)Send him to senior secondary school

(vi) Send him to a technical college

(vii)Send him to teacher training college

(viii)Get him to repeat his 3rd year of junior secondary

(ix)Any other choice (state exactly)

_____

_____

14. Name Two jobs you would very strongly recommend to your child to do as an adult

(i) _____

(ii) _____

15. The previous secondary school system was a straight 5-year course teaching mainly academic type subjects. The newly introduced programme separates secondary education into junior and senior courses of 3 years duration each with both vocational and academic subjects taught with equal emphasis. Now read through the statements below and indicate

with a tick the box against the option most agrees with your judgement of our secondary school education system. Remember, tick ONLY ONE of the statements.

(i) The JSS 3-year course teaching vocational and academic subjects should continue as has been planned.

(ii) There was nothing very much wrong with the old 5-year secondary school course teaching only academic subjects. We should go back to that system.

(iii) Secondary education should reverent to 5 years but there should be optional vocational subjects in the curriculum.

(iv) Secondary option should be continuous for 6 full years with vocational subjects made compulsory for the first 3 years only.

(v) Vocational schools should be separated from academic schools with the training periods planned to suit the needs of each course.

16. Give reason for your choice above?_____
_____

Thank you very much for your co-operation in patiently expressing your views on the various issues raised by my questions.

Accra October 2014 G. M. Osei

Appendix 8

INTERVIEW SCHEDULE

In order to permit probing of individual perceptions the questions have been left open-ended and were modified according to the circumstances of the interviewees. Although the questions were designed to reflect the main thrust of the theoretical framework and analytical model of the thesis they were used mainly as a guide for the interviews.

Questions: Infrastructural (I) factors, Conceptualisation (rationale, clarity and justification of purpose and objectives:

1.From your knowledge of the old secondary school system, how far would you agree that there is need for change?

In other words, what is your assessment of the old secondary school system?

2. How far does it seem to you that you have clearly understood the purpose of the new secondary school system?

To what extent for example, do you consider the aims and objectives of the new system to have been clearly specified by the MOE with regard to the following:

- vocational curriculum

- continuous assessment

- guidance and counselling, and

- the JSS structure?

3. How relevant and tenable would you consider the specified outcomes of the various innovation components?

4. How would you rather present your own concepts about these innovation components?

5. How useful have the official specifications been in guiding interpretations of the intended outcomes of the various innovation elements?

Implementation: Planning and Management

1.How far would you say that the planned Innovation outcomes clearly anticipated the implications of the change on:

- syllabus
- teaching methods
- assessment techniques
- guidance orientation
- greater student involvement
- transition rates
- resource provision?

To what extent could the policy makers be said to have demonstrated adequate knowledge in anticipating the impact /effects of the outcomes of the innovation components?

2. How rational would you judge the mode, i.e. strategy/method, of resource provision that has been applied in respect of financing; accommodation; acquisition and distribution of

equipment; employment; deployment and training of teachers, and the designing, production and distribution of learning materials?

(By whom and through what means have these been provided?)

3. To what extent could it be claimed that actual operation in each innovation area conforms to the official specifications? (each component to be considered separately, i.e. vocational curriculum, continuous assessment and guidance and counselling).

How far could constraints be seen to exist? What kinds?

(For probing; any relationship to the following:

Syllabus content and scope, adequacy, influence of old examination practices, specification of new assessment criteria for new assessable learning domains, instrument construction and application, work load, recording, practice of guidance, teaching strategies, practicals).

4. How much freedom could you exercise in your course of responsibilities to modify official specifications concerning outcomes and implementation strategy?

(Please give instances)

5. How adequately would you consider resource management generally in terms of:

- materials

- equipment

- personnel and expertise

- accommodation

- time and

- funds

6. How easily could relevant information about the innovation be said to be available about the innovation components?

7. How far could implementers be said to have been sufficiently prepared to operate the innovation?

8. How could the role of the CDC be seen to have been clearly specified with regard to the innovation?

9. To what extent has the CDC actually been involved in the innovation process?

Evaluation

1.How far has it been possible to monitor the implementation of the innovation?

2. In what manner and with what criteria could monitoring be said to be conducted?

By whom is monitoring carried out?

3. What reports are available and how far could they be said to have influenced any decision-making?

4. How appropriate is the CA reporting format perceived to be?

5. How acceptable and practicable is the JSS structure perceived to be?

Questions Relating to Authority (A) Factors

Political Leadership Support

1.How far could political leadership at both National and Regional levels under both civilian and military governments, be said to support the innovation? How far is the support manifested in the decisions and actions concerning:

- finance;

- material and equipment procurement and allocation;

- identification with the innovation, and

- legislative measures?

Bureaucratic Authority (Administrative Support)

How far could directives in respect of the innovation initiated from the administrative base, be seen to be consistent with and supportive of, policy specifications? How far is the implementation process affected by administrative decisions and actions?

2. How effectively could communication channels employed be seen to facilitate implementation?

Professional Authority

1.How much corroboration could be said to exist between decisions and actions initiated by professionals and those from the political and administrative people?

INTRODUCTORY TECHNOLOGY LESSON

(Researcher's Notes taken during Lesson)

9.50 Revision of Lesson on Ceramics. Class now quiet.

Teacher: What are the properties of Ceramics?

S1: heat resistant. Chemical resistant.

T: Explains more of the chemical property with examples of toilet system and gutter in the lab. which resists chemicals.

Also, fragile.

Plastics

Derived from crude petroleum. No resistance to heat - disadvantage. But light in weight (advantage). Resists corrosion, therefore don't soak your clothes in metal overnight.

Used for electrical insulators manufacture.

10.00 Teacher Behaviour	Student Behaviour
New Topic:	
Plastic Walks round class "what do you mean when you say that something is plastic?"	S2 attempts wrongly
Did you say elastic or plastic?	No Reaction?
All those materials which elongate but don't go back to original shape are plastic. Explains in Akan.	Most students not taking notes.

Does not give copious notes – writes briefly on board.
Most boys making other notes then four boys come in with clay.

10.10 Explains the making of plastic foam by passing air through liquid plastic in Akan.
Plastic foam used for fenders (e.g. in cars, ships) mattresses, cushions, padding in electrical equipment.

Plastic foam is pliant and heat resistant – used as insulators.

Classes of Plastic

Thermoplastics basins, containers
Thermosetting plastic, buttons, pot handles, scratch proof.

10.11 Class of Plastics

Teacher Behaviour	Student Behaviour
Did you do this in class 2? Did we? Okay we'll carry on little longer with this.	Answer "Yes" form most boys.

[Researcher's comments:
This may explain why the boys are doing other things e.g. on my right he is doing an engineering assignment. On my left two boys are copying other notes from other people's books.

10.17 Have just confirmed this from the boy on my right.]

10.18 Polyethylene

Teacher is surprised he'd gone so far previously in this lesson. Did he not consult his scheme?

10.25 Teacher Behaviour	Student Behaviour
Yes. Haven't you seen a burnt house? You'll find the electrical insulation all melted.	S3 asks question. Do thermoplastics melt?

10.27 Nylon

Tries to give example of nylon used for skirts.	S4 offers example of his singlet.
Teacher brings S4 to show others.	A boy has been sitting on his desk.
10.30 Unscrews switch from wall to show thermosetting plastic material.	

10.40 shows two types of metal wires — No reaction.
10.42 That's all about types of plastics.

Processing of Plastics

Teacher Behaviour	Student Behaviour
Draws a head/says it is a toy.	Sudden quiet. Calls from S.
Explains the prosses of injection moulding and shows the point at which surplus plastic is snipped off in every processing.	S5 passes his watch to neighbours to see the point of cut off?
Can we use this method for Thermoset? Why?	No. S6 S7 because thermoset doesn't melt.
10.55 Bell.	
Teacher: Extrusion Method.	
11.00	External noise distracting. Other students looking in from Window. Lack of attention from students in class.
11.03 Teacher continues teaching	Boy calls for English assignments.
Teacher gets angry dismisses class. "Okay I see you are tired".	Noise.

Classroom Observation (From Researcher's Notes)

Lesson Title Machines – Pulleys, Wedges, Levers, and Screw Jacks For today – Screw Jacks and Wedges.

Greatest use of technology to man is lifting of weight. Reference to motor jack, crane.

Jacks

Teacher compares a jack to the see-saw. Students say they don't know it. (Teacher continues talking and also writes on the board):
Jacks are force multiplier machines where you apply a little force and you carry the load.

Mechanical Advantage: A machine is any instrument we use to accomplish various tasks, e.g. Jack is used to lift vehicles when changing tyres or when necessary. At the playground the machine called a "see – saw" enables a small boy to lift a big boy. A machine multiplies the small force applied to it many times to a much bigger force in order to do work. Thus, it is called a force multiplier.

The force which we apply to machine in order to enable us to lift a load is called "effort".

$$\text{Mechanical Advantage} = \frac{\text{load}}{\text{effort}} \quad \text{i.e.} \quad MA = \frac{\text{load}\ (L)}{\text{effort}\ (E)}$$

$$M = \frac{L}{E}$$

$$E = \frac{L}{MA}$$

$$L = E \times MA.$$

Let us compare the MA of two jacks as we use them to lift a vehicle of 2,000 (5, 000) kg. weight. Jack A requires an effort of (30) kg. weight, while Jack B requires an effort of 40 (80) kg. weight.

Solution

Jack A $MA = \frac{L}{E} = \frac{2{,}000\text{kg wt.}}{20\text{ mg. wt.}}$

$MA = 100$

Jack B $MA = \frac{L}{} = \frac{2{,}000\text{ kg. wt.}}{}$

E = 40 kg. wt.

MA = 50.

Therefore, Jack A is better than Jack B because it requires less effort.
1.15 p.m. Gives assignment using 5,000, 30 x 80 to substitute the figures. To do straight away in class.

Student by me works assignment:

Jack A = $\frac{5,000}{30}$ = 166.2

Jack B = $\frac{5,000}{80}$ = 62.1 kg.

Researcher's Comment: It would seem that Researcher's suggestion during visit in September 1999 had been taken up about bringing relevant equipment from the store for use in the class during lesson. Previously they had said they took students to the store to show them the equipment lying on the floor.

Introductory Technology - Lesson Profile

Teacher Behaviour	12.27 Revision of last test. Most passed only a few had 40. 12.35 Main Lesson (Writes title on the blackboard) Machines: Screw Jacks and Wedges.	12.40 Brings and shows a machine – jack – cannot see from the back as jack is on the floor in front. Shows a drawing in the book, but cannot see anything. Demonstrates the use of jack to show amount of force used. Decides to demonstrate to a small group in front first.	11.55 Everybody goes out doors for demonstration of see – saw. 2 boys used for demonstration. Writes out notes on blackboard after class had returned to the class room.	1:00 formula 1.15 Class assignment. Teacher looks at the students in front row doing the assignment. Teacher works out assignment on blackboard 1.30 bell Lesson over.
Students' Behaviour	Noise of desks.	Students at back stand to see demonstration, but still cannot see anything.	Take down notes.	Noise

Appendix 9

NOTES FOR CLASSROOM OBSERVATION

(Schedule adapted from Taba (1962), Delamont (1976) and Walker and Adelman (1975)

Points to Note:

1. Physical Setting:

location/accessibility

age and general outlook/maintenance

storage facilities

degree of specialisation for use

equipment/apparatus

a-v-a availability/condition

acoustics, temperature, humidity, lighting and ventilation

2. Documentation

(i) Sketches of space utilisation by teacher and students during lesson.

(ii) List all available spaces (all kinds) in the school i.e. teaching, office, workshops, labs, toilets, halls, dormitories, corridors, stores, library, resource centre, dispensary, etc.

(iii) Note discrepancies between official designation of space and actual use.

3. Pupils

How many, how old, boys/girls/mixed ability, course, name/no. of class?

Interaction amongst pupils – is it friendship pattern or influenced by furniture/sitting arrangement?

Note degrees of participation of pupils – does teacher allow the same pupils to speak always?

Do pupils at corners and behind behave differently?

Which ones lack the learning materials?

4. Teachers

(i) Mode of entry into class and first activities.

(ii) How long before lesson proper begins?

(iii) Compare teacher behaviour inside and outside the class.

(iv) Compare teacher language – complexity of grammar and vocabulary – with that of students. How do students react – do they understand?

(v) How does teacher handle a child whose question shows he has not understood? Does teacher change language for example?

(vi) Does teacher use analogies? Do children understand?

(vii) Assess if there is mutual communication between teacher and students.

(viii) Note number of pauses and hesitations.

(ix) How does teacher deal with unexpected events?

(x) How does he manage individual learning – does he get to everyone? How does he adjust his language and posture from student to student?

5. Resources

(i) Books, materials, a-v equipment, tools – available and location?

(ii) How are tasks defined? e.g. instructions, assignments, worksheets, negotiation?

(iii) Do teachers and students have equal access to resources?

(iv) What is school buying policy for materials, equipment?

(v) What technical assistance is available?

6. The Lesson

(i) How is it designated on timetable?

(ii) Under which department?

(iii) Who is the teacher/name and qualification/other subjects/classes taught, special duties?

(iv) What is the aim of lesson from teacher's point of view?

(v) How does it relate to a sequence or theme?

(vi) What is the logical structure of its content?

(vii) Syllabus available.

(viii) Scheme of work.

(ix) Lesson notes.

(x) Assignment given by teacher.

(xi) Assessment by teacher

(xii) Notes taken by children of lesson.

(xiii) Sample of children's assignments and tests.

(xiv) Teacher's class mark-sheets.

7. Background Information about School

(i) Name.

(ii) Type.

(iii) Sex composition.

(iv) Age range.

(v) Size/population.

(vi) Location – urban/semi-urban/rural.

(vii) Total staff size

(viii) Staff categories:

A. ACADEMIC:

Graduate with teacher training

Graduate without teacher training

NCE

HND

OND

TC/WASC

Others (specify)

B. NON-ACADEMIC STAFF:

Administrative officer

Bursar

Accounts clerks

Executive officers

Clerical officers

Others

(ix) School documents: - log books, school magazines.

(x) Organisational structure of the school with positions and tasks as defined.

Appendix 10

GENERAL EDUCATIONAL STATISTICS FOR GHANA

Source: Ministry of Education, Accra, Ghana

MINISTRY OF EDUCATION - CORE EDUCATIONAL INDICATORS (1987-1998)

(PUBLIC AND PRIVATE SCHOOLS)

NUMBER OF PRIMARY SCHOOLS (NATIONAL AND REGIONAL FIGURES)

REGION	DESCRIPTION	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98
NATIONAL	PUBLIC	9424	9368	9831	10623	11142	11270	11369	11218	11435	11765	11236
	PRIVATE	145	*	*	*	570	740	951	916	954	1249	1090
	TOTAL	9569	9368	9831	10623	11712	12010	12320	12134	12389	13014	12326
ASHANTI	PUBLIC	1622	1547	1616	1672	1741	1721	1718	1695	1747	1785	1813
	PRIVATE	27	*	*	*	171	219	314	290	299	378	362
	TOTAL	1649	1547	1616	1672	1912	1940	2032	1985	2046	2163	2175
BRONG AHAFO	PUBLIC	1104	1225	1223	1299	1254	1348	1395	1393	1400	1409	1377
	PRIVATE	8	*	*	*	70	45	88	68	106	137	110
	TOTAL	1112	1225	1223	1299	1324	1393	1483	1461	1506	1546	1487
CENTRAL	PUBLIC	932	970	991	1065	1135	1144	1154	1158	1148	1178	1143
	PRIVATE	7	*	*	*	48	23	51	51	62	87	60
	TOTAL	939	970	991	1065	1183	1167	1205	1209	1210	1265	1203
EASTERN	PUBLIC	1702	1602	1656	1772	1852	1831	1836	1849	1870	1903	1806
	PRIVATE	14	*	*	*	69	73	94	93	106	134	120
	TOTAL	1716	1602	1656	1772	1921	1904	1930	1942	1976	2037	1926
GREATER ACCRA	PUBLIC	623	497	516	545	639	649	657	683	713	726	743
	PRIVATE	73	*	*	*	116	310	290	314	278	374	297
	TOTAL	696	497	516	545	755	959	947	997	991	1100	1040
NORTHERN	PUBLIC	678	891	929	1191	1199	1213	1136	994	1068	1203	1058
	PRIVATE	0	*	*	*	20	0	12	3	0	1	13
	TOTAL	678	891	929	1191	1219	1213	1148	997	1068	1204	1071
UPPER EAST	PUBLIC	276	287	313	361	352	374	403	413	426	438	321
	PRIVATE	0	*	*	*	5	1	11	1	1	5	8
	TOTAL	276	287	313	361	357	375	414	414	427	443	329
UPPER WEST	PUBLIC	244	237	284	324	308	335	347	346	350	359	330
	PRIVATE	0	*	*	*	1	0	1	2	2	0	6
	TOTAL	244	237	284	324	309	335	348	348	352	359	336
VOLTA	PUBLIC	1222	1066	1197	1187	1410	1431	1435	1412	1422	1444	1387
	PRIVATE	5	*	*	*	30	28	34	25	30	48	32
	TOTAL	1227	1066	1197	1187	1440	1459	1469	1437	1452	1492	1419
WESTERN	PUBLIC	1021	1046	1106	1207	1252	1224	1288	1275	1291	1320	1258
	PRIVATE	11	*	*	*	40	41	56	69	70	85	82
	TOTAL	1032	1046	1106	1207	1292	1265	1344	1344	1361	1405	1340

*Data unavailable

NUMBER OF JUNIOR SECONDARY SCHOOLS (NATIONAL AND REGIONAL FIGURES)

REGION	DESCRIPTION	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98
NATIONAL	PUBLIC	5260	5169	5136	5136	5135	5129	5217	5241	5394	5597	5571
	PRIVATE	*	*	*	*	128	123	157	218	245	282	449
	TOTAL	5260	5169	5136	5136	5263	5252	5374	5459	5639	5879	6020
ASHANTI	PUBLIC	958	942	912	871	858	860	854	858	873	899	929
	PRIVATE	*	*	*	*	17	22	42	49	56	58	97
	TOTAL	958	942	912	871	875	882	896	907	929	957	1026
BRONG AHAFO	PUBLIC	554	640	598	577	580	592	603	606	611	638	641
	PRIVATE	*	*	*	*	11	5	13	17	23	28	37
	TOTAL	554	640	598	577	591	597	616	623	634	666	678
CENTRAL	PUBLIC	592	635	622	646	648	668	679	685	701	728	754
	PRIVATE	*	*	*	*	8	2	4	10	17	21	21
	TOTAL	592	635	622	646	656	670	683	695	718	747	775
EASTERN	PUBLIC	1018	853	867	860	838	837	839	847	869	908	907
	PRIVATE	*	*	*	*	15	8	10	14	21	28	51
	TOTAL	1018	853	867	860	853	845	849	861	890	936	958
GREATER ACCRA	PUBLIC	452	379	369	374	376	381	386	399	425	435	446
	PRIVATE	*	*	*	*	47	72	74	114	104	115	158
	TOTAL	452	379	369	374	423	453	460	513	529	550	604
NORTHERN	PUBLIC	165	195	210	221	257	217	246	219	252	266	248
	PRIVATE	*	*	*	*	5	1	0	0	0	0	10
	TOTAL	165	195	210	221	262	218	246	219	252	266	258
UPPER EAST	PUBLIC	118	132	143	151	152	157	157	157	164	172	128
	PRIVATE	*	*	*	*	3	0	1	0	1	1	3
	TOTAL	118	132	143	151	155	157	158	157	165	173	131
UPPER WEST	PUBLIC	123	131	149	161	162	169	183	189	199	213	206
	PRIVATE	*	*	*	*	0	0	0	0	1	1	9
	TOTAL	123	131	149	161	162	169	183	189	200	214	215
VOLTA	PUBLIC	757	706	687	663	673	656	667	666	682	700	690
	PRIVATE	*	*	*	*	8	4	4	5	8	13	30
	TOTAL	757	706	687	663	681	660	671	671	690	713	720
WESTERN	PUBLIC	523	556	579	612	591	592	603	615	618	640	622
	PRIVATE	*	*	*	*	14	9	9	9	14	17	33
	TOTAL	523	556	579	612	605	601	612	624	632	657	655

*Data unavailable

NUMBER OF SENIOR SECONDARY SCHOOLS AT THE NATIONAL AND REGIONAL LEVELS

REGION	DESCRIPTION	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97
NATIONAL	PUBLIC	239	245	250	404	413	438	452	452	453	456
	PRIVATE	*	*	*	*	40	43	49	51	46	48
	TOTAL	239*	245	250	404	453	481	501	503	499	504
ASHANTI	PUBLIC	47	49	49	72	72	75	78	78	78	78
	PRIVATE	*	*	*	*	17	19	14	13	13	13
	TOTAL	47*	49	49	72	89	94	92	91	91	91
BRONG AHAFO	PUBLIC	23	22	25	40	42	48	51	51	51	51
	PRIVATE	*	*	*	*	6	11	10	5	4	2
	TOTAL	23*	22	25	40	48	59	61	56	55	53
CENTRAL	PUBLIC	26	26	26	43	43	47	47	47	47	47
	PRIVATE	*	*	*	*	1	0	8	7	5	4
	TOTAL	26*	26	26	43	44	47	55	54	52	51
EASTERN	PUBLIC	42	44	45	64	68	73	73	73	73	73
	PRIVATE	*	*	*	*	3	1	3	5	7	7
	TOTAL	42*	44	45	64	71	74	76	78	80	80
GREATER ACCRA	PUBLIC	25	25	25	32	33	34	35	35	34	35
	PRIVATE	*	*	*	*	4	9	9	12	8	8
	TOTAL	25*	25	25	32	37	43	44	47	42	43
NORTHERN	PUBLIC	11	11	11	29	29	29	29	29	28	31
	PRIVATE	*	*	*	*	0	1	1	1	0	1
	TOTAL	11*	11	11	29	29	30	30	30	28	32
UPPER EAST	PUBLIC	7	7	7	15	16	16	18	18	19	19
	PRIVATE	*	*	*	*	1	1	1	0	0	3
	TOTAL	7*	7	7	15	17	17	19	18	19	22
UPPER WEST	PUBLIC	6	6	6	12	12	12	14	14	15	14
	PRIVATE	*	*	*	*	1	1	1	2	2	9
	TOTAL	6*	6	6	12	13	13	15	16	17	23
VOLTA	PUBLIC	32	35	36	59	60	64	66	66	66	66
	PRIVATE	*	*	*	*	7		2	5	7	1
	TOTAL	32*	35	36	59	67	64	68	71	73	67
WESTERN	PUBLIC	20	20	20	38	38	40	41	41	42	42
	PRIVATE	*	*	*	*	0		0	1	0	
	TOTAL	20*	20	20	38	38	40	41	42	42	42

*Data unavailable

GROSS INTAKE RATE IN JUNIOR SECONDARY SCHOOLS(NATIONAL AND REGIONAL FIGURES)

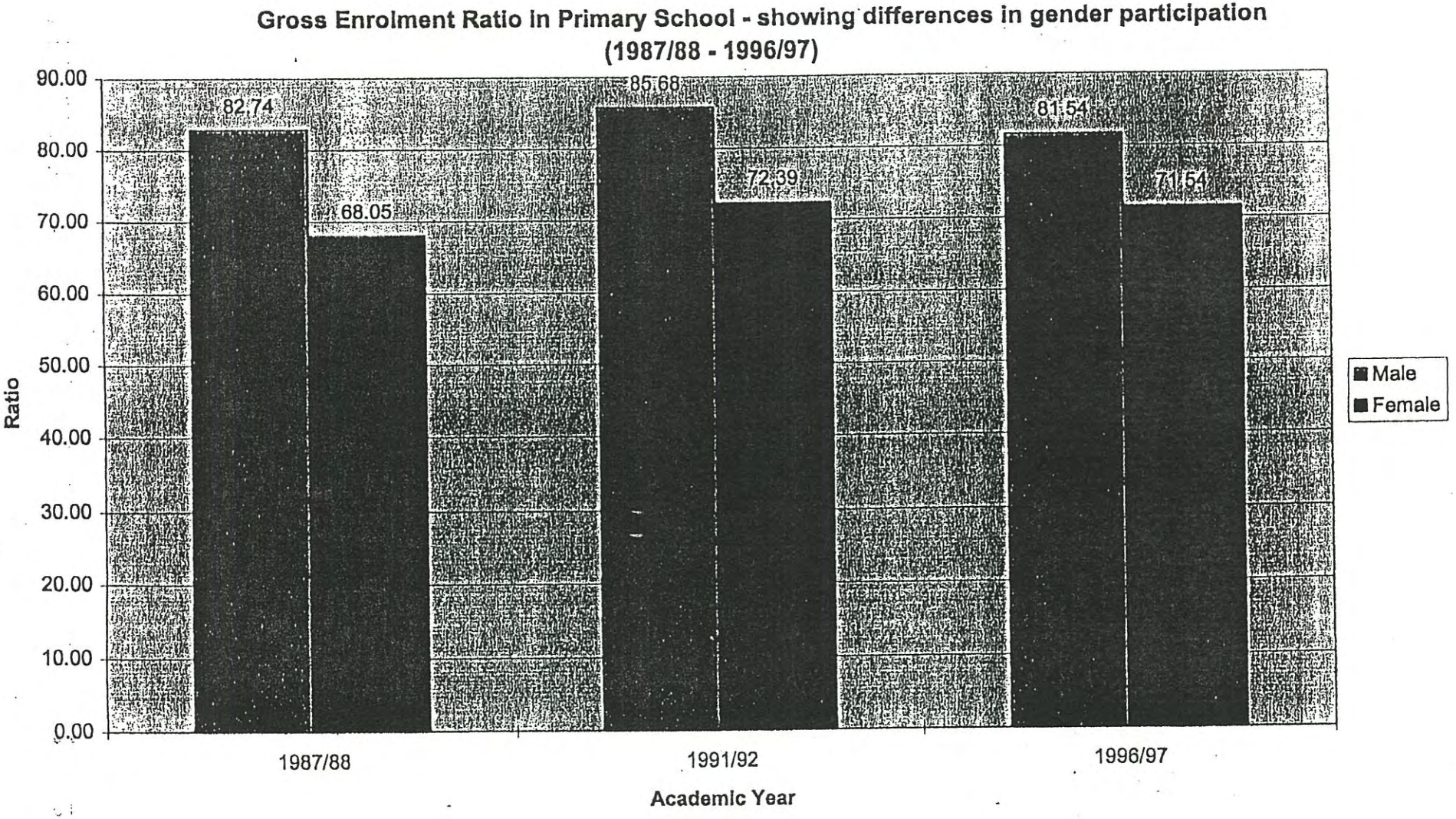
REGION	DESCRIPTION	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98
NATIONAL	Total Population(12yrs)	329129	339106	350105	361459	372251	383364	394800	406573	418693	435950	453916
	Total Admission	180855	190518	198805	215598	229877	239943	248184	254068	267899	275738	275377
	Gross Intake Rate	**54.95**	**56.18**	**56.78**	**59.65**	**61.75**	**62.59**	**62.86**	**62.49**	**63.98**	**63.25**	**60.67**
ASHANTI	Total Population(12yrs)	55381	57060	58909	60820	62528	64282	66082	67929	69824	72546	75390
	Total Admission	39793	40146	40049	42897	44819	47130	47695	48544	51155	52483	55669
	Gross Intake Rate	**71.85**	**70.36**	**67.98**	**70.53**	**71.68**	**73.32**	**72.18**	**71.46**	**73.26**	**72.34**	**73.84**
BRONG AHAFO	Total Population(12yrs)	33581	34603	35726	36885	38219	39600	41028	42505	44035	46148	48333
	Total Admission	17155	22477	21891	23170	24665	25346	26253	25340	26337	27170	27143
	Gross Intake Rate	**51.09**	**64.96**	**61.27**	**62.82**	**64.54**	**64.01**	**63.99**	**59.62**	**59.81**	**58.88**	**56.16**
CENTRAL	Total Population(12yrs)	29008	29888	30857	31858	32532	33220	33921	34635	35363	36506	37684
	Total Admission	20056	20916	21576	23680	24139	24112	24791	25971	27234	28202	28564
	Gross Intake Rate	**69.14**	**69.98**	**69.92**	**74.33**	**74.20**	**72.58**	**73.08**	**74.98**	**77.01**	**77.25**	**75.80**
EASTERN	Total Population(12yrs)	44232	45574	47053	48580	49891	51234	52611	54024	55471	57593	59787
	Total Admission	32973	29164	31770	33528	34211	34042	34399	34879	36745	37661	37690
	Gross Intake Rate	**74.55**	**63.99**	**67.52**	**69.02**	**68.57**	**66.44**	**65.38**	**64.56**	**66.24**	**65.39**	**63.04**
GREATER ACCRA	Total Population(12yrs)	39952	41160	42494	43872	45478	47142	48863	50647	52492	55031	57670
	Total Admission	20261	24015	25979	29432	35301	38298	39151	42083	43344	44169	45702
	Gross Intake Rate	**50.71**	**58.35**	**61.14**	**67.09**	**77.62**	**81.24**	**80.12**	**83.09**	**82.57**	**80.26**	**79.25**
NORTHERN	Total Population(12yrs)	32660	33650	34741	35868	37209	38598	40038	41529	43074	45167	47363
	Total Admission	4784	6714	7087	8284	10602	10914	12779	12281	13392	14771	13202
	Gross Intake Rate	**14.65**	**19.95**	**20.40**	**23.10**	**28.49**	**28.28**	**31.92**	**29.57**	**31.09**	**32.70**	**27.87**
UPPER EAST	Total Population(12yrs)	20562	21183	21870	22578	23227	23894	24579	25283	26005	27007	28083
	Total Admission	3568	3551	3698	4407	4936	5601	6301	7012	8267	9004	6478
	Gross Intake Rate	**17.35**	**16.76**	**16.91**	**19.52**	**21.25**	**23.44**	**25.64**	**27.73**	**31.79**	**33.34**	**23.07**
UPPER WEST	Total Population(12yrs)	11453	11800	12182	12576	12903	13237	13578	13928	14287	14816	15365
	Total Admission	2174	3114	4671	3813	4184	4569	5264	5557	6002	6195	5523
	Gross Intake Rate	**18.98**	**26.39**	**38.34**	**30.32**	**32.43**	**34.52**	**38.77**	**39.90**	**42.01**	**41.81**	**35.95**
VOLTA	Total Population(12yrs)	30734	31663	32692	33751	34458	35179	35913	36660	37423	38610	39846
	Total Admission	23515	21791	22269	24283	24752	26607	27611	27744	29521	29118	28924
	Gross Intake Rate	**76.51**	**68.82**	**68.12**	**71.95**	**71.83**	**75.63**	**76.88**	**75.68**	**78.88**	**75.42**	**72.59**
WESTERN	Total Population(12yrs)	31566	32525	33581	34671	35806	36978	38187	39433	40719	42526	44395
	Total Admission	16576	18630	19815	22104	22268	23326	23940	24657	25902	26965	26482
	Gross Intake Rate	**52.51**	**57.28**	**59.01**	**63.75**	**62.19**	**63.08**	**62.69**	**62.53**	**63.61**	**63.41**	**59.65**

GROSS ENROLMENT RATIO IN JUNIOR SECONDARY SCHOOLS (NATIONAL AND REGIONAL FIGURES)

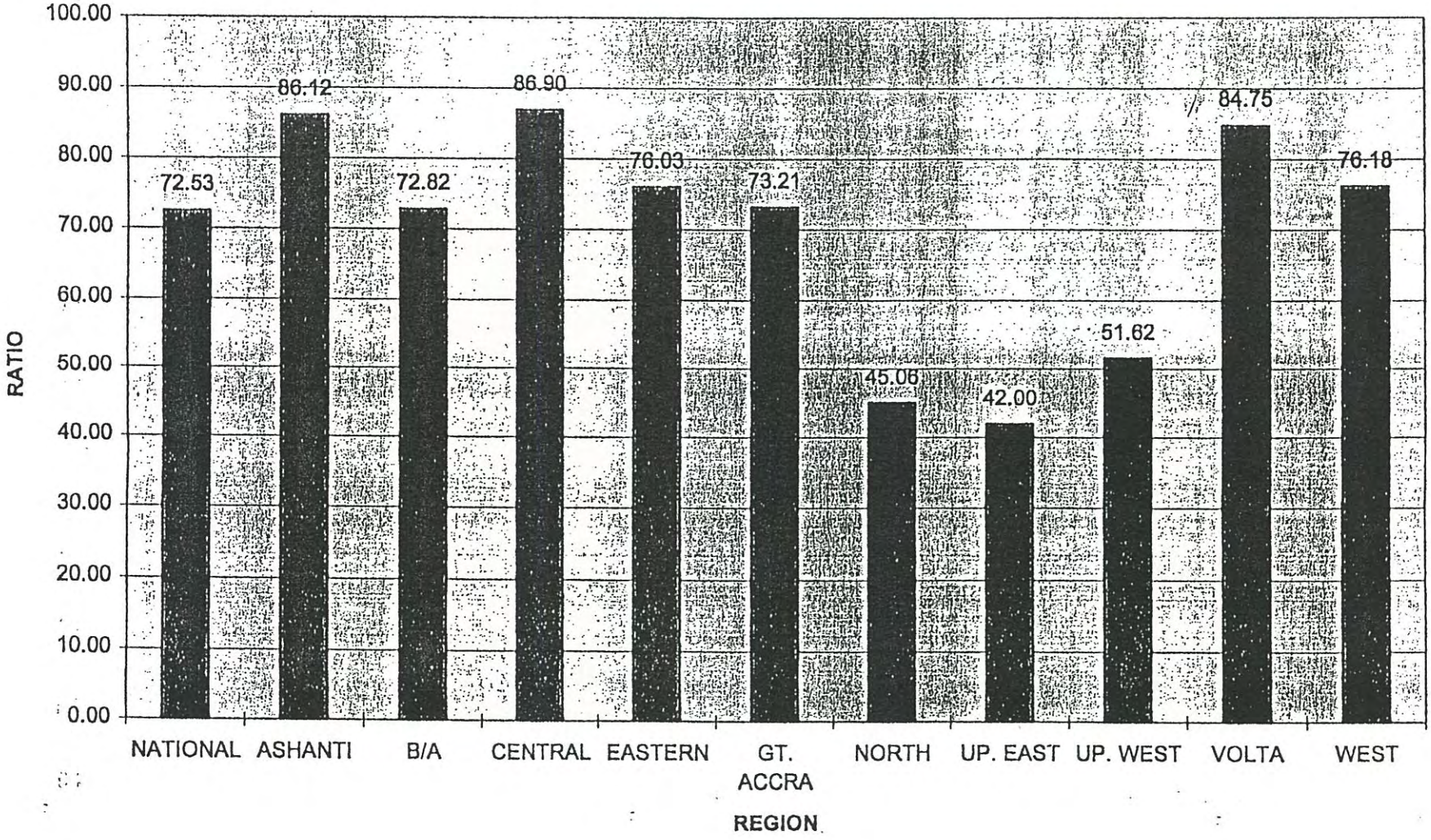
REGION	DESCRIPTION	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98
NATIONAL	Total Population(12-14yrs)	951984	980650	1012281	1044945	1077342	1108668	1141947	1176214	1211494	1259679	1309780
	Total Enrolment	610094	608690	625018	569343	605760	644976	676182	690558	713878	738057	755162
	Gross Enrolment Ratio	64.09	62.07	61.74	54.49	56.23	58.18	59.21	58.71	58.93	58.59	57.66
ASHANTI	Total Population(12-14yrs)	160186	165008	170330	175825	181796	185899	191139	196517	202038	209623	217540
	Total Enrolment	134453	128662	129648	114265	117886	125724	129313	131032	136069	140786	149584
	Gross Enrolment Ratio	83.94	77.97	76.12	64.99	64.90	67.63	67.65	66.68	67.35	67.16	68.75
BRONG AHAFO	Total Population(12-14yrs)	97131	100065	103297	106633	110508	114521	118672	122969	127416	133342	139465
	Total Enrolment	57091	72095	70046	63234	66589	69233	72441	69976	70715	73046	74721
	Gross Enrolment Ratio	58.78	72.05	67.81	59.30	60.26	60.45	61.04	56.91	55.50	54.78	53.58
CENTRAL	Total Population(12-14yrs)	83905	86431	89219	92098	94065	96071	98115	100198	102321	105484	108736
	Total Enrolment	67867	67770	70135	62200	64114	65890	68115	70043	73241	74795	77677
	Gross Enrolment Ratio	80.89	78.41	78.61	67.54	68.16	68.58	69.42	69.90	71.58	70.91	71.44
EASTERN	Total Population(12-14yrs)	127936	131795	136048	140440	144255	148167	152177	156290	160507	166414	172516
	Total Enrolment	114838	97168	102702	89598	90454	92088	94046	94475	96407	99386	103574
	Gross Enrolment Ratio	89.76	73.73	75.49	63.80	62.70	62.15	61.80	60.45	60.06	59.72	60.04
GREATER ACCRA	Total Population(12-14yrs)	115558	119030	122667	126828	131496	136332	141336	146520	151888	159014	166409
	Total Enrolment	69083	73717	77006	74170	87275	101471	106625	115395	118062	122126	126746
	Gross Enrolment Ratio	59.78	61.93	62.67	58.48	66.37	74.43	75.44	78.76	77.73	76.80	76.17
NORTHERN	Total Population(12-14yrs)	94466	97311	100449	103691	107587	111623	115808	120144	124637	130510	136665
	Total Enrolment	15076	17545	20621	21691	27457	28973	33651	33211	36587	39119	36400
	Gross Enrolment Ratio	15.96	18.03	20.53	20.92	25.52	25.96	29.06	27.64	29.35	29.97	26.63
UPPER EAST	Total Population(12-14yrs)	59473	61258	63232	65271	67160	69101	71094	73142	75245	78039	81034
	Total Enrolment	10258	10531	10806	11395	13428	14690	16659	18260	20603	22789	17561
	Gross Enrolment Ratio	17.25	17.19	17.09	17.46	19.99	21.26	23.43	24.97	27.38	29.20	21.67
UPPER WEST	Total Population(12-14yrs)	33130	34123	35222	36358	37308	38279	39275	40295	41340	42611	44337
	Total Enrolment	6631	8982	11338	10637	11133	12291	14036	15244	16259	16640	16027
	Gross Enrolment Ratio	20.02	26.32	32.19	29.26	29.84	32.11	35.74	37.83	39.33	38.87	36.15
VOLTA	Total Population(12-14yrs)	88896	91571	94523	97572	99635	101735	103877	106059	108282	111564	114977
	Total Enrolment	80181	71064	71448	64991	68311	72816	76613	77130	78753	79518	81360
	Gross Enrolment Ratio	90.20	77.61	75.59	66.61	68.56	71.57	73.75	72.72	72.73	71.28	70.78
WESTERN	Total Population(12-14yrs)	91301	94058	97094	100229	103532	106940	110454	114080	117820	122678	128101
	Total Enrolment	54614	61156	61268	57162	59011	61800	64683	65792	67182	69852	71510
	Gross Enrolment Ratio	59.82	65.02	63.10	57.03	57.00	57.79	58.56	57.67	57.02	56.95	55.82

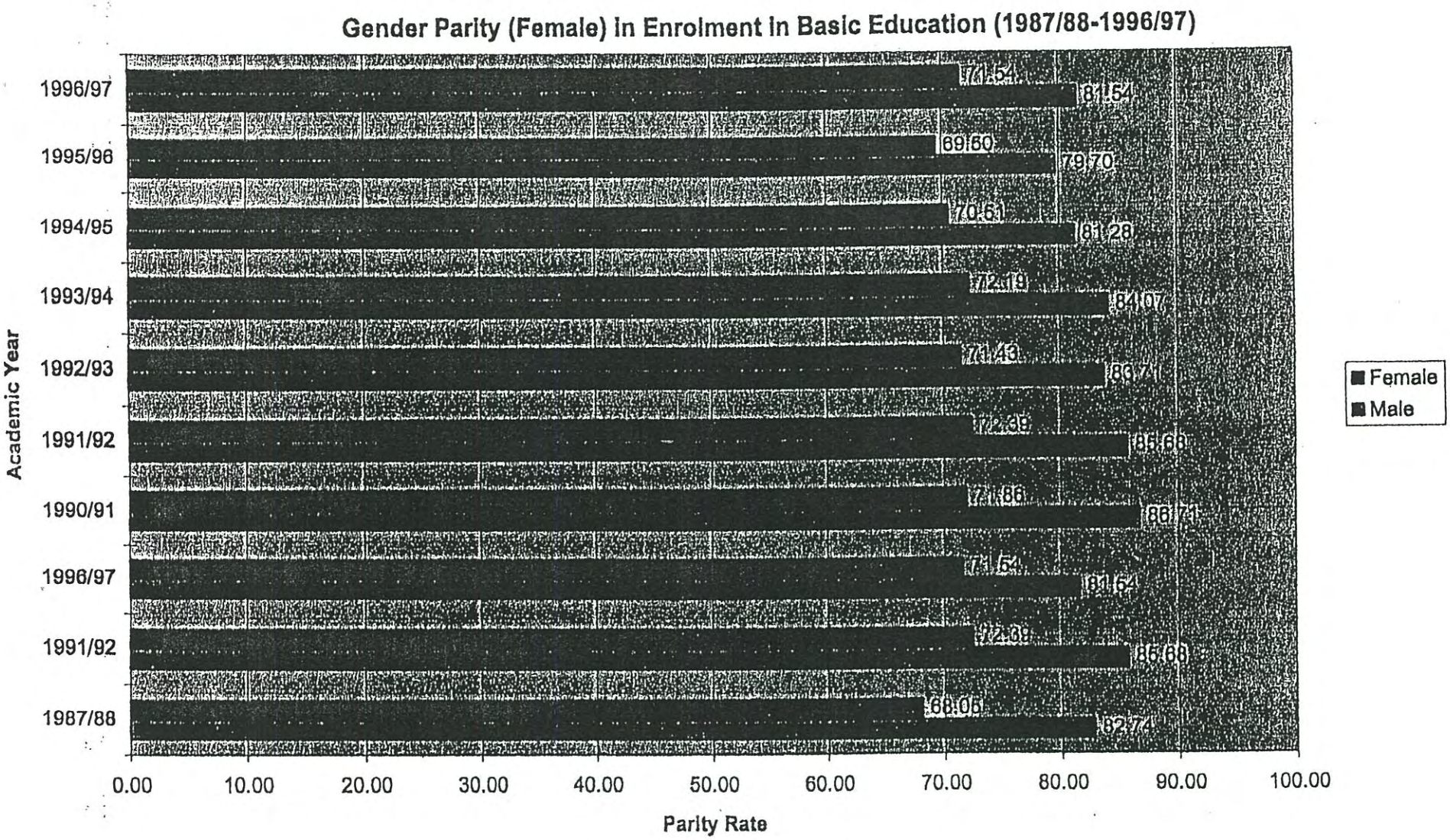
MALE GROSS INTAKE RATE IN PRIMARY SCHOOLS(NATIONAL AND REGIONAL FIGURES)

REGION	DESCRIPTION	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98
NATIONAL	Total Population(6yrs)	206004	212398	218993	225793	234714	243991	253632	263650	274063	282805	291825
	Total Admission	187773	188529	192421	211154	208587	207878	214704	209816	212620	235514	237785
	Gross Intake Rate	**91.15**	**88.76**	**87.87**	**93.52**	**88.87**	**85.20**	**84.65**	**79.58**	**77.58**	**83.28**	**81.48**
ASHANTI	Total Population(6yrs)	34554	35627	36733	37873	39295	40769	42298	43882	45525	46857	48251
	Total Admission	35560	32083	32758	37345	38583	38212	39778	37888	38192	41521	42781
	Gross Intake Rate	**102.91**	**90.05**	**89.18**	**98.61**	**98.19**	**93.73**	**94.04**	**86.34**	**83.89**	**88.61**	**88.66**
BRONG AHAFO	Total Population(6yrs)	21685	22358	23052	23768	24864	26011	27209	28462	29772	30943	32128
	Total Admission	19884	20117	20194	21056	19984	20824	22200	21065	21650	25442	26986
	Gross Intake Rate	**91.69**	**89.98**	**87.60**	**88.59**	**80.37**	**80.06**	**81.59**	**74.01**	**72.72**	**82.22**	**84.00**
CENTRAL	Total Population(6yrs)	18185	18749	19331	19932	20573	21235	21917	22620	23345	23920	24506
	Total Admission	19785	20411	20719	20095	18416	18487	19377	20160	20606	21996	21111
	Gross Intake Rate	**108.80**	**108.86**	**107.18**	**100.82**	**89.52**	**87.06**	**88.41**	**89.12**	**88.27**	**91.96**	**86.15**
EASTERN	Total Population(6yrs)	28004	28873	29770	30694	31841	33031	34264	35541	36866	37966	39091
	Total Admission	31104	30663	30059	28326	28256	27834	29103	28807	29377	30833	30036
	Gross Intake Rate	**111.07**	**106.20**	**100.97**	**92.29**	**88.74**	**84.27**	**84.94**	**81.05**	**79.69**	**81.21**	**76.84**
GREATER ACCRA	Total Population(6yrs)	24426	25184	25966	26772	27938	29153	30420	31741	33117	34333	35564
	Total Admission	16847	14545	14408	22770	25261	24481	23713	23300	23283	25135	23254
	Gross Intake Rate	**68.97**	**57.75**	**55.49**	**85.05**	**90.42**	**83.97**	**77.95**	**73.41**	**70.31**	**73.21**	**65.39**
NORTHERN	Total Population(6yrs)	20420	21054	21708	22382	23417	24500	25633	26817	28055	29130	30249
	Total Admission	12587	17527	15624	22019	20318	19091	17967	15688	16596	23043	25835
	Gross Intake Rate	**61.64**	**83.25**	**71.97**	**98.38**	**86.77**	**77.92**	**70.09**	**58.50**	**59.16**	**79.10**	**85.41**
UPPER EAST	Total Population(6yrs)	12505	12893	13293	13706	14243	14801	15380	15982	16606	17083	17618
	Total Admission	6794	7795	9271	11375	10532	10909	11775	11703	11973	13162	12222
	Gross Intake Rate	**54.33**	**60.46**	**69.74**	**82.99**	**73.95**	**73.70**	**76.56**	**73.23**	**72.10**	**77.05**	**69.37**
UPPER WEST	Total Population(6yrs)	6941	7157	7379	7608	7885	8172	8470	8778	9097	9359	9629
	Total Admission	4039	4962	5280	6160	5441	6132	6406	6591	6141	7078	7400
	Gross Intake Rate	**58.19**	**69.33**	**71.55**	**80.97**	**69.00**	**75.04**	**75.63**	**75.09**	**67.51**	**75.63**	**76.85**
VOLTA	Total Population(6yrs)	19035	19626	20235	20864	21525	22207	22910	23634	24381	24952	25551
	Total Admission	21530	19461	22223	20629	20530	21531	22258	22358	22506	23236	23922
	Gross Intake Rate	**113.11**	**99.16**	**109.82**	**98.87**	**95.38**	**96.96**	**97.15**	**94.60**	**92.31**	**93.12**	**93.62**
WESTERN	Total Population(6yrs)	20249	20877	21526	22194	23133	24112	25131	26193	27299	28262	29238
	Total Admission	19643	20965	21885	21379	21266	20377	22127	22256	22296	24068	24238
	Gross Intake Rate	**97.01**	**100.42**	**101.67**	**96.33**	**91.93**	**84.51**	**88.05**	**84.97**	**81.67**	**85.16**	**82.90**

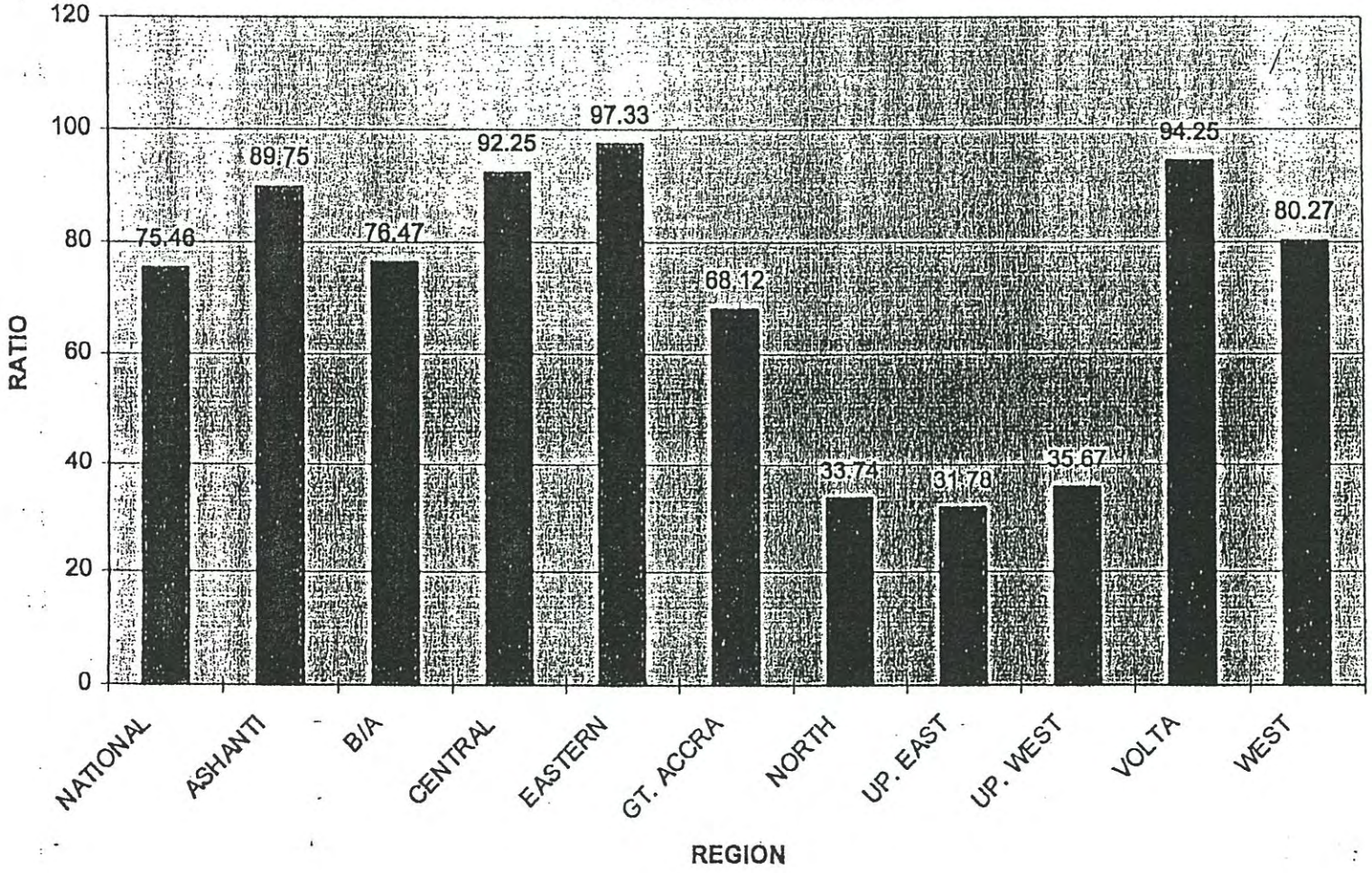

Gross Enrolment Ratio in Primary School - showing differences in gender participation
(1987/88 - 1996/97)
90.00
80.00
70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
Ratio
82.74
68.05
85.68
72.39
81.54
71.54
1987/88
1991/92
1996/97
Academic Year
Male
Female

GROSS ENROLMENT RATIO IN PRIMARY SCHOOLS - SHOWING REGIONAL COMPARISON IN 1998

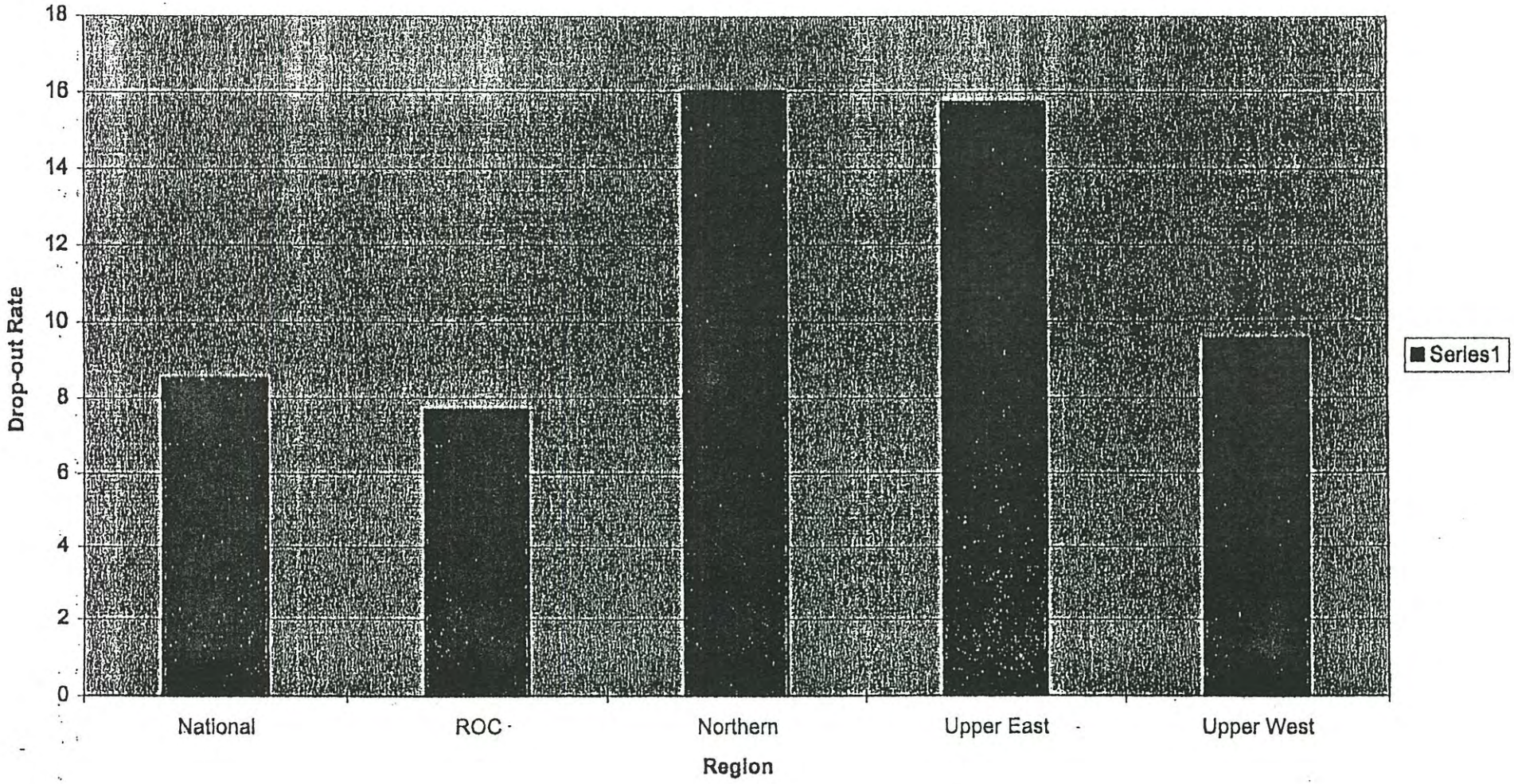



Gender Parity (Female) in Enrolment in Basic Education (1987/88-1996/97)
1996/97
1995/96
1994/95
1993/94
1992/93
1991/92
1990/91
1996/97
1991/92
1987/88
71.54
81.54
69.50
79.70
70.61
81.28
72.19
84.07
71.43
86.71
72.39
85.66
71.86
86.71
71.54
81.54
72.39
85.66
68.05
82.74
Academic Year
0.00
10.00
20.00
30.00
40.00
50.00
60.00
70.00
80.00
90.00
100.00
Parity Rate
Female
Male

GROSS ENROLMENT RATIO IN PRIMARY SCHOOLS - SHOWING REGIONAL COMPARISON IN 1987



Drop-out between Primary 6 and JSS1 - Showing disparities in attrition rates between the three Northern Regions and the Rest of the Country (ROC) (1996/97)



TRANSITION RATES - PRE-TERTIARY EDUCATION 1987/88-1997/98

TRANSITION	INDICATOR	TYPE	DESCRIPTION	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98
P6 - JSS1	REPETITION	Public	Enr(clsX/yrX)	220749	206792	222706	237803	243836	253992	265750	274305	282354		
			Repeaters(clsX/yrX+1)	4816	3214	3920	5101	6420	6407	7971	9042	8783		
			Repetition Rate	2.18	1.55	1.76	2.15	2.63	2.52	3.00	3.30	3.11		
		Male	Enr(clsX/yrX)	124739	119991	128365	136138	139151	143901	149934	153516	156795		
			Repeaters(clsX/yrX+1)	2607	1784	2363	2999	3824	3831	4557	5260	4989		
			Repetition Rate	2.09	1.49	1.84	2.20	2.75	2.66	3.04	3.43	3.18		
		Female	Enr(clsX/yrX)	96010	86801	94341	101665	104685	110091	115816	120789	125559		
			Repeaters(clsX/yrX+1)	2209	1430	1557	2102	2596	2576	3414	3782	3794		
			Repetition Rate	2.30	1.65	1.65	2.07	2.48	2.34	2.95	3.13	3.02		
		Private	Enr(clsX/yrX)				14068	23853	22641	25942	28438	29173		
			Repeaters(clsX/yrX+1)				294	259	368	334	317	421		
			Repetition Rate				2.09	1.09	1.63	1.29	1.11	1.44		
		Male	Enr(clsX/yrX)				7430	12895	11777	13489	14809	15070		
			Repeaters(clsX/yrX+1)				173	142	191	174	165	211		
			Repetition Rate				2.33	1.10	1.62	1.29	1.11	1.40		
		Female	Enr(clsX/yrX)				6630	10958	10864	12453	13629	14103		
			Repeaters(clsX/yrX+1)				121	117	177	160	152	210		
			Repetition Rate				1.83	1.07	1.63	1.28	1.12	1.49		
		Total	Enr(clsX/yrX)				251871	267689	276633	291692	302743	311527		
			Repeaters(clsX/yrX+1)				5395	6679	6775	8305	9359	9204		
			Repetition Rate				2.14	2.50	2.45	2.85	3.09	2.95		
		Male	Enr(clsX/yrX)				143576	152046	155678	163423	168325	171865		
			Repeaters(clsX/yrX+1)				3172	3966	4022	4731	5425	5200		
			Repetition Rate				2.21	2.61	2.58	2.89	3.22	3.03		
		Female	Enr(clsX/yrX)				108295	115643	120955	128269	134418	139662		
			Repeaters(clsX/yrX+1)				2223	2713	2753	3574	3934	4004		
			Repetition Rate				2.05	2.35	2.28	2.79	2.93	2.87		

TRANSITION	INDICATOR	TYPE	DESCRIPTION	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98
P6 - JSS1	PROMOTION	Public	Enrolment(clsX+1/yrX+1)	193079	200541	218455	225825	234618	241878	245520	253231	260172		
			Repeaters(clsX+1/yrX+1)	2561	1736	2857	2501	2869	3380	4569	680	2041		
			Enrolment(clsX/yrX)	220749	206792	222706	237803	243836	253992	265750	274305	282354		
			Number Promoted	190518	198805	215598	223324	231749	238498	240951	252551	258131		
			Promotion Rate	86.31	96.14	96.81	93.91	95.04	93.90	90.67	92.07	91.42		
		Male	Enrolment(clsX+1/yrX+1)	112239	115488	127132	129938	133370	137074	137913	141587	144313		
			Repeaters(clsX+1/yrX+1)	1491	1077	1660	1441	1587	1808	2426	356	1070		
			Enrolment(clsX/yrX)	124739	119991	128365	136138	139151	143901	149934	153516	156795		
			Number Promoted	110748	114411	125472	128497	131783	135266	135487	141231	143243		
			Promotion Rate	88.78	95.35	97.75	94.39	94.71	94.00	90.36	92.00	91.36		
		Female	Enrolment(clsX+1/yrX+1)	80840	85053	91323	95887	101248	104804	107607	111644	115859		
			Repeaters(clsX+1/yrX+1)	1070	659	1197	1060	1282	1572	2143	324	971		
			Enrolment(clsX/yrX)	96010	86801	94341	101665	104685	110091	115816	120789	125559		
			Number Promoted	79770	84394	90126	94827	99966	103232	105464	111320	114888		
			Promotion Rate	83.09	97.23	95.53	93.27	95.49	93.77	91.06	92.16	91.50		
		Private	Enrolment(clsX+1/yrX+1)				6562	8230	9746	13191	15184	17676		
			Repeaters(clsX+1/yrX+1)				9	36	60	74	56	69		
			Enrolment(clsX/yrX)				14068	23853	22641	25942	28438	29173		
			Number Promoted				6553	8194	9686	13117	15128	17607		
			Promotion Rate				46.58	34.35	42.78	50.56	53.20	60.35		
		Male	Enrolment(clsX+1/yrX+1)				3518	4294	5079	6770	7820	9086		
			Repeaters(clsX+1/yrX+1)				5	15	26	40	30	29		
			Enrolment(clsX/yrX)				7438	12895	11777	13469	14809	15070		
			Number Promoted				3513	4279	5053	6730	7790	9057		
			Promotion Rate				47.23	33.18	42.91	49.89	52.60	60.10		
		Female	Enrolment(clsX+1/yrX+1)				3044	3936	4667	6421	7364	8590		
			Repeaters(clsX+1/yrX+1)				4	21	34	34	26	40		
			Enrolment(clsX/yrX)				6630	10958	10864	12453	13629	14103		
			Number Promoted				3040	3915	4633	6387	7338	8550		
			Promotion Rate				45.85	35.73	42.65	51.29	53.84	60.63		

TRANSITION RATES - PRE-TERTIARY EDUCATION 1987/88-1997/98

TRANSITION	INDICATOR	TYPE	DESCRIPTION	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98
P6 - JSS1	PROMOTION	Total	Enrolment(clsX+1/yrX+1)	-			232387	242848	251624	258711	268415	277848		
			Repeaters(clsX+1/yrX+1)	-			2510	2905	3440	4643	736	2110		
			Enrolment(clsX/yrX)	-			251871	267689	276633	291692	302743	311527		
			Number Promoted	-			229877	239943	248184	254068	267679	275738		
			Promotion Rate	-			91.27	89.63	89.72	87.10	88.42	88.51		
		Male	Enrolment(clsX+1/yrX+1)	-			133456	137664	142153	144683	149407	153399		
			Repeaters(clsX+1/yrX+1)				1446	1602	1834	2466	386	1099		
			Enrolment(clsX/yrX)				143576	152046	155678	163423	168325	171865		
			Number Promoted				132010	136062	140319	142217	149021	152300		
			Promotion Rate				91.94	89.49	90.13	87.02	88.53	88.62		
		Female	Enrolment(clsX+1/yrX+1)				98931	105184	109471	114028	119008	124449		
			Repeaters(clsX+1/yrX+1)				1064	1303	1606	2177	350	1011		
			Enrolment(clsX/yrX)				108295	115643	120955	128269	134418	139662		
			Number Promoted				97867	103881	107865	111851	118658	123438		
			Promotion Rate				90.37	89.83	89.18	87.20	88.28	88.38		
	DROP-OUT	Public	Promoters(clsX+1/yrX+1)	190518	198805	215598	223324	231749	238498	240951	249094	258131		
			Repeaters(clsX/yrX+1)	4816	3214	3920	5101	6420	6407	7971	9042	8783		
			Enrolment(clsX/yrX)	220749	206792	222706	237803	243836	253992	265750	274305	282354		
			Drop-out Figure	25415	4773	3188	9378	5667	9087	16828	16169	15440		
			Drop-out Rate	11.51	2.31	1.43	3.94	2.32	3.58	6.33	5.89	5.47		
		Male	Promoters(clsX+1/yrX+1)	110748	114411	125472	128497	131783	135266	135487	139437	143243		
			Repeaters(clsX/yrX+1)	2607	1784	2363	2999	3824	3831	4557	5260	4989		
			Enrolment(clsX/yrX)	124739	119991	128365	136138	139151	143901	149934	153516	156795		
			Drop-out Figure	11384	3796	530	4642	3544	4804	9890	8819	8563		
			Drop-out Rate	9.13	3.16	0.41	3.41	2.55	3.34	6.60	5.74	5.46		
		Female	Promoters(clsX+1/yrX+1)	79770	84394	90126	94827	99966	103232	105464	109657	114888		
			Repeaters(clsX/yrX+1)	2209	1430	1557	2102	2596	2576	3414	3782	3794		
			Enrolment(clsX/yrX)	96010	86801	94341	101665	104685	110091	115816	120789	125559		
			Drop-out Figure	14031	977	2658	4736	2123	4283	6938	7350	6877		
			Drop-out Rate	14.61	1.13	2.82	4.66	2.03	3.89	5.99	6.08	5.48		

TRANSITION	INDICATOR	TYPE	DESCRIPTION	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98
P6 - JSS1	DROP-OUT	Private	Promoters(clsX+1/yrX+1)				6553	8194	9686	13117	15103	17607		
			Repeaters(clsX/yrX+1)				294	259	368	334	317	421		
			Enrolment(clsX/yrX)				14068	23853	22641	25942	28438	29173		
			Drop-out Figure				7221	15400	12587	12491	13018	11145		
			Drop-out Rate				51.33	64.56	55.59	48.15	45.78	38.20		
		Male	Promoters(clsX+1/yrX+1)				3513	4279	5053	6730	7775	9057		
			Repeaters(clsX/yrX+1)				173	142	191	174	165	211		
			Enrolment(clsX/yrX)				7438	12895	11777	13489	14809	15070		
			Drop-out Figure				3752	8474	6533	6585	6869	5802		
			Drop-out Rate				50.44	65.72	55.47	48.82	46.38	38.50		
		Female	Promoters(clsX+1/yrX+1)				3040	3915	4633	6387	7328	8550		
			Repeaters(clsX/yrX+1)				121	117	177	160	152	210		
			Enrolment(clsX/yrX)				6630	10958	10864	12453	13629	14103		
			Drop-out Figure				3469	6926	6054	5906	6149	5343		
			Drop-out Rate				52.32	63.20	55.73	47.43	45.12	37.89		
		Total	Promoters(clsX+1/yrX+1)				229877	239943	248184	254068	264197	275738		
			Repeaters(clsX/yrX+1)				5395	6679	6775	8305	9359	9204		
			Enrolment(clsX/yrX)				251871	267689	276633	291692	302743	311527		
			Drop-out Figure				16599	21067	21674	29319	29187	26585		
			Drop-out Rate				6.59	7.87	7.83	10.05	9.64	8.53		
		Male	Promoters(clsX+1/yrX+1)				132010	136062	140319	142217	147212	152300		
			Repeaters(clsX/yrX+1)				3172	3966	4022	4731	5425	5200		
			Enrolment(clsX/yrX)				143576	152046	155678	163423	168325	171865		
			Drop-out Figure				8394	12018	11337	16475	15688	14365		
			Drop-out Rate				5.85	7.90	7.28	10.08	9.32	8.36		
		Female	Promoters(clsX+1/yrX+1)				97867	103881	107865	111851	116985	123438		
			Repeaters(clsX/yrX+1)				2223	2713	2753	3574	3934	4004		
			Enrolment(clsX/yrX)				108295	115643	120955	128269	134418	139662		
			Drop-out Figure				8205	9049	10337	12844	13499	12220		
			Drop-out Rate				7.58	7.82	8.55	10.01	10.04	8.75		

JUNIOR SECONDARY SCHOOL TRANSITION RATES AT THE NATIONAL LEVEL

TRANSITION	DESCRIPTION	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97
P6 - JSS1	Repeaters	4816	3214	3920	5395	6679	6775	8305	9359	9204	*
	Repetition Rate	2.18	1.55	1.76	2.14	2.50	2.45	2.85	3.09	2.95	*
	NO. Promoted	190518	198805	215598	229877	239943	248184	254068	267679	275738	*
	Promotion Rate	86.31	96.14	96.81	91.27	89.63	89.72	87.10	88.42	88.51	*
	Drop-out Figure	25415	4773	3188	16599	21067	21674	29319	29187	26585	*
	Drop-out Rate	11.51	2.31	1.43	6.59	7.87	7.83	10.05	9.64	8.53	*
JSS1 - JSS2	Repeaters	2561	2143	2857	2501	2905	3440	4643	736	2110	*
	Repetition Rate	1.42	1.11	1.42	1.14	1.25	1.42	1.85	0.28	0.79	*
	NO. Promoted	165543	176276	186397	196145	214010	223033	226138	234479	242674	*
	Promotion Rate	91.53	91.30	92.95	89.79	92.09	91.84	89.87	90.63	90.41	*
	Drop-out Figure	12751	14660	11287	19809	15472	16375	20843	21749	23631	*
	Drop-out Rate	7.05	7.59	5.63	9.07	6.66	6.74	8.28	8.41	8.80	*
JSS2 - JSS3	Repeaters	*	2143	3194	3341	3798	3888	5061	3857	4972	*
	Repetition Rate	*	1.29	1.79	1.76	1.86	1.79	2.23	1.67	2.09	*
	NO. Promoted	*	142148	159899	166061	183029	196793	199873	205529	211666	*
	Promotion Rate	*	85.58	89.62	87.59	89.87	90.35	88.08	88.90	88.81	*
	Drop-out Figure	*	21816	15326	20189	16830	17127	21987	21813	21698	*
	Drop-out Rate	*	13.13	8.59	10.65	8.26	7.86	9.69	9.43	9.1	*

* Data unavailable

PERCENTAGE OF TRAINED TEACHERS IN PRIMARY SCHOOLS(NATIONAL AND REGIONAL FIGURES)

REGION	DESCRIPTION	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98
NATIONAL	NO. of Teachers	65305	62670	62859	66946	72451	67760	69232	71863	67414	71340	63689
	NO. of Trained Teachers	37456	37769	41713	42607	51310	46424	47654	55325	53965	54572	50964
	Trained Teachers as %	57.36	60.27	66.36	63.64	70.82	68.51	68.83	76.99	80.05	76.50	80.02
ASHANTI	NO. of Teachers	12329	10599	10946	12199	13053	12342	12699	12986	12630	13732	12763
	NO. of Trained Teachers	7043	7116	7728	8152	9118	8725	8964	10274	10256	10381	9860
	Trained Teachers as %	57.13	67.14	70.60	66.83	69.85	70.69	70.59	79.12	81.20	75.60	77.25
BRONG AHAFO	NO. of Teachers	5806	7736	7823	7779	8403	7804	8174	8163	7982	8240	7427
	NO. of Trained Teachers	2654	3730	4142	4129	5335	4686	4875	5920	5724	5826	5456
	Trained Teachers as %	45.71	48.22	52.95	53.08	63.49	60.05	59.64	72.52	71.71	70.70	73.46
CENTRAL	NO. of Teachers	5897	6453	6705	6392	6812	6286	6520	6788	6210	6930	5993
	NO. of Trained Teachers	3865	3748	4710	4333	4988	4415	4451	5182	5185	5342	4936
	Trained Teachers as %	65.54	58.08	70.25	67.79	73.22	70.24	68.27	76.34	83.49	77.09	82.36
EASTERN	NO. of Teachers	12479	11420	10784	11235	11900	10798	11052	11602	10968	11268	9608
	NO. of Trained Teachers	7283	7591	7364	7696	9044	7960	8087	9378	9110	9046	8204
	Trained Teachers as %	58.36	66.47	68.29	68.50	76.00	73.72	73.17	80.83	83.06	80.28	85.39
GREATER ACCRA	NO. of Teachers	4884	4169	4358	6732	7547	7355	7139	8529	7537	7968	6710
	NO. of Trained Teachers	3936	3669	3961	4616	5303	5078	4996	6079	5469	5429	5115
	Trained Teachers as %	80.59	88.01	90.89	68.57	70.27	69.04	69.98	71.27	72.56	68.14	76.23
NORTHERN	NO. of Teachers	3074	5044	4170	4714	5569	4913	4853	4441	3883	4394	3870
	NO. of Trained Teachers	1037	2046	1874	1952	3663	2598	2715	3057	3061	3188	2725
	Trained Teachers as %	33.73	40.56	44.94	41.41	65.77	52.88	55.94	68.84	78.83	72.55	70.41
UPPER EAST	NO. of Teachers	2011	2232	1930	2002	2165	1994	2158	2106	2061	2187	1723
	NO. of Trained Teachers	928	1391	1441	1450	1700	1594	1694	1915	1877	1855	1651
	Trained Teachers as %	46.15	62.32	74.66	72.43	78.52	79.94	78.50	90.93	91.07	84.82	95.82
UPPER WEST	NO. of Teachers	1105	1245	1412	1329	1552	1504	1582	1581	1510	1523	1441
	NO. of Trained Teachers	699	875	1160	1037	1304	1262	1374	1412	1358	1345	1328
	Trained Teachers as %	63.26	70.28	82.15	78.03	84.02	83.91	86.85	89.31	89.93	88.31	92.16
VOLTA	NO. of Teachers	10736	7073	7572	7326	7868	7545	7575	7970	7531	7880	7511
	NO. of Trained Teachers	6364	4809	5589	5642	6645	6203	6345	7059	6933	7184	6987
	Trained Teachers as %	59.28	67.99	73.81	77.01	84.46	82.21	83.76	88.57	92.06	91.17	93.02
WESTERN	NO. of Teachers	6984	6699	7159	7238	7582	7219	7480	7697	7102	7218	6643
	NO. of Trained Teachers	3647	2794	3744	3600	4210	3903	4153	5049	4992	4976	4702
	Trained Teachers as %	52.22	41.71	52.30	49.74	55.53	54.07	55.52	65.60	70.29	68.94	70.78

TEACHER NUMBERS IN JUNIOR SECONDARY SCHOOLS

LEVEL	INDICATOR	DESCRIPTION	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98	CHANGE	%CHANGE
JUNIOR SECONDARY SCHOOL	Teacher Numbers	Public Enrolment(JSS1-JSS3)	610004	608690	625018	569343	592867	629258	655642	659851	677641	695468	.	85464	14.01
		NO. of Teachers	32612	34584	35262	30708	33395	32896	36110	35622	33218	38016	.	5404	16 57
		PTR	18.70	17.60	17.72	18.64	17.75	19.13	18.16	18.62	20.40	18.29	.	-0.41	-2.20
		Private Enrolment(JSS1-JSS3)	.	.	.	.	12893	15718	20540	30707	36237	42589	.	29696	230.33
		NO. of Teachers	.	.	.	.	854	928	1272	1819	2055	2401	.	1547	181 15
		PTR	.	.	.	.	15.10	16.94	16.15	16.88	17.63	17.74	.	2.64084	17.49
		Total Enrolment(JSS1-JSS3)	.	.	.	.	605760	644976	676182	690558	713878	738057	.	132297	21 839838
		NO. of Teachers	.	.	.	.	34249	33824	37382	37441	35273	40417	.	6168	18.01
		PTR	.	.	.	.	17.69	19.07	18.09	18.44	20.24	18.26		0.57411	3.25
	Numbers	NO. of Teachers(Public)	32612	34584	35262	30708	33395	32896	36110	35622	33218	38016	.	5404	16 570588
		Trained	22189	24844	22874	23303	24064	25092	27315	27798	29669	31224	.	9035	40 72
		Trained as %	3.64	4 08	3 66	4 09	4 06	3 99	4.17	4.21	4.38	4.49	.	0.85	23.43
		Male	21114	.	26933	22478	25664	25166	27747	27146	24708	28717	.	7603	36 01
		Male as %	64.74		76.38	73.20	76 85	76.50	76.84	76.21	74.38	75.54		10.7962	16.68
		Trained(Male)	13127	.	16558	16456	17257	18094	19764	20095	21438	22517	.	9390	71 53
		Trained as %(Male)	62.17		61.48	73.21	67.24	71.90	71.23	74.03	86.77	78.41		16.238	26.12
		Female	11498	.	8329	8230	7731	7730	8363	8476	8510	9299	.	-2199	-19 13
		Female as %	35.26	.	23 62	26 80	23 15	23.50	23 16	23.79	25.62	24.46	.	-10.80	-30.62
		Trained(Female)	9062	.	6316	6847	6807	6998	7551	7703	8231	8231	.	-831	-9 17
		Trained as %(Female)	78.81		75 83	83.20	88 05	90 53	90 29	90.88	96.72	88.51		9.70119	12 31
	Numbers	NO. of Teachers(Private)	.	.	.	.	854	928	1272	1819	2055	2401	.	1547	181 14754
		Trained	.	.	.	.	480	381	508	607	717	808	.	328	68 33
		Trained as %	.	.	.	.	56 21	41 06	39.94	33.37	34.89	33.65	.	-22.5534	-40 13
		Male	.	.	.	.	668	729	1020	1502	1719	2018	.	1350	202 10
		Male as %					78 22	78.56	80.19	82.57	83.65	84.05	.	5 82817	7 45
		Trained(Male)	.	.	.	.	360	267	363	466	557	620	.	260	72 22
		Trained as %(Male)	.	.	.	.	53.89	36.63	35.59	31.03	32.40	30.72	.	-23.1687	-42 99
		Female	.	.	.	.	186	199	252	317	336	383	.	197	105.91
		Female as %	.	.	.	.	21 78	21 44	19.81	17.43	16.35	15.95	.	-5.83	-26.76
		Trained (Female)	.	.	.	.	120	114	145	141	160	188	.	68	56.67
		Trained as %(Female)	.	.	.	.	64 52	57.29	57 54	44.48	47.62	49.09	.	-15.43	-23.92

LEVEL	INDICATOR	DESCRIPTION	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98	CHANGE	%CHANGE
JUNIOR SECONDARY SCHOOL	Teacher Numbers	NO. of Teachers(Total)	.	.	.	.	34249	33824	37382	37441	35273	40417	.	6168	18.01
		Trained	.	.	.	.	24544	25473	27823	28405	30386	32032	.	7488	30.51
		Trained as %	.	.	.	.	71.66	75.31	74.43	75.87	86.15	79.25	.	7.59037	10.59
		Male	.	.	.	.	26332	25895	28767	28648	26427	30735	.	4403	16.72
		Male as %	.	.	.	.	76.88	76.56	76.95	76.52	74.92	76.04	.	.	.
		Trained(Male)	.	.	.	.	17617	18361	20127	20561	21995	23137	.	5520	31.33
		Trained as %(Male)	.	.	.	.	66.90	70.91	69.97	71.77	83.23	75.28	.	8.37561	12.52
		Female	.	.	.	.	7917	7929	8615	8793	8846	9682	.	1765	22.29
		Female as %	.	.	.	.	23 12	23.44	23.05	23.48	25.08	23.96	.	0.84	3.63
		Trained(Female)	.	.	.	.	6927	7112	7696	7844	8391	8895	.	1968	28.41
		Trained as %(Female)	.	.	.	.	87.50	89.70	89.33	89.21	94.86	91.87	.	4.38	5.00

PERCENTAGE OF TRAINED TEACHERS IN JUNIOR SECONDARY SCHOOLS (NATIONAL AND REGIONAL FIGURES)

REGION	DESCRIPTION	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98
NATIONAL	NO. of Teachers	32615	34584	35262	30708	34249	33824	37382	37441	35273	40417	37728
	NO. of Trained Teachers	22192	24844	22874	23303	24544	25473	27823	28405	29219	32032	32647
	Trained Teachers as %	68.04	71.84	64.87	75.89	71.66	75.31	74.43	75.87	82.84	79.25	86.53
ASHANTI	NO. of Teachers	7613	6604	6531	6601	6348	6618	7287	7125	6807	8120	7498
	NO. of Trained Teachers	4854	5055	4372	4643	4796	5120	5541	5610	4878	6445	6522
	Trained Teachers as %	63.76	76.54	66.94	70.34	75.55	77.36	76.04	78.74	71.66	79.37	86.98
BRONG AHAFO	NO. of Teachers	2711	3994	4095	3275	4068	3888	4140	4114	4039	4493	4250
	NO. of Trained Teachers	1622	2568	2386	2442	2678	2867	3084	3086	3312	3574	3715
	Trained Teachers as %	59.83	64.30	58.27	74.56	65.83	73.74	74.49	75.01	82.00	79.55	87.41
CENTRAL	NO. of Teachers	4036	4037	4062	3721	3715	3432	3687	3792	3574	4280	3998
	NO. of Trained Teachers	2624	2588	2502	2613	2651	2650	2797	2773	3089	3263	3339
	Trained Teachers as %	65.01	64.11	61.60	70.22	71.36	77.21	75.86	73.13	86.43	76.24	83.52
EASTERN	NO. of Teachers	6319	6071	5700	5238	5720	5632	6188	6110	5735	6200	5571
	NO. of Trained Teachers	4858	4540	3959	4203	4299	4229	4489	4526	4940	5110	4903
	Trained Teachers as %	76.88	74.78	69.46	80.24	75.16	75.09	72.54	74.08	86.14	82.42	88.01
GREATER ACCRA	NO. of Teachers	2210	3177	3416	3268	3832	3964	4555	5196	5092	5356	5149
	NO. of Trained Teachers	1708	2843	2656	2669	3041	3390	3773	4111	4305	4349	4312
	Trained Teachers as %	77.29	89.49	77.75	81.67	79.36	85.52	82.83	79.12	84.54	81.20	83.74
NORTHERN	NO. of Teachers	933	1222	1461	1082	1607	1463	1600	1412	1401	1704	1617
	NO. of Trained Teachers	560	809	805	797	987	943	1098	1009	1141	1323	1370
	Trained Teachers as %	60.02	66.20	55.10	73.66	61.42	64.46	68.63	71.46	81.44	77.64	84.72
UPPER EAST	NO. of Teachers	598	905	1055	749	1015	882	1026	975	874	1041	898
	NO. of Trained Teachers	304	534	505	474	525	599	710	699	729	801	815
	Trained Teachers as %	50.84	59.01	47.87	63.28	51.72	67.91	69.20	71.69	83.41	76.95	90.76
UPPER WEST	NO. of Teachers	414	728	884	692	849	732	868	855	775	872	867
	NO. of Trained Teachers	254	502	478	471	493	557	663	711	739	727	796
	Trained Teachers as %	61.35	68.96	54.07	68.06	58.07	76.09	76.38	83.16	95.35	83.37	91.81
VOLTA	NO. of Teachers	4475	4263	4030	3181	3421	3726	4220	4194	3762	4370	4315
	NO. of Trained Teachers	3086	3193	2949	2769	2792	2811	3143	3264	3398	3691	3894
	Trained Teachers as %	68.96	74.90	73.18	87.05	81.61	75.44	74.48	77.83	90.32	84.46	90.24
WESTERN	NO. of Teachers	3306	3583	4028	2901	3674	3487	3811	3668	3214	3981	3565
	NO. of Trained Teachers	2322	2212	2262	2222	2282	2307	2525	2616	2688	2749	2981
	Trained Teachers as %	70.24	61.74	56.16	76.59	62.11	66.16	66.26	71.32	83.63	69.05	83.62

GROSS ENROLMENT RATIO IN PRIMARY SCHOOLS (NATIONAL AND REGIONAL FIGURES)

REGION	DESCRIPTION	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98
NATIONAL	Total Population(6-11yrs)	2222516	2308878	2379922	2453146	2544676	2638831	2736919	2838678	2944253	3048161	3155758
	Total Enrolment	1677074	1598443	1703074	1945422	2011602	2047293	2138635	2154646	2196735	2333347	2288768
	Gross Enrolment Ratio	75.46	69.23	71.56	79.30	79.05	77.58	78.14	75.90	74.61	76.55	72.53
ASHANTI	Total Population(6-11yrs)	373959	388499	400452	412772	427371	442475	458104	474276	491007	507245	524134
	Total Enrolment	335614	301313	321143	368312	384316	390238	407479	403753	410771	440044	451393
	Gross Enrolment Ratio	89.75	77.56	80.20	89.23	89.93	88.19	88.95	85.13	83.66	86.75	86.12
BRONG AHAFO	Total Population(6-11yrs)	226845	235605	242859	250335	261224	272581	284423	296774	309657	322660	336031
	Total Enrolment	173465	178139	180986	201035	201695	208986	223070	215551	220025	239518	244700
	Gross Enrolment Ratio	76.47	75.61	74.52	80.31	77.21	76.67	78.43	72.63	71.05	74.23	72.82
CENTRAL	Total Population(6-11yrs)	195887	203496	209758	216212	223353	228666	235153	241818	248667	255249	261989
	Total Enrolment	180701	178931	188388	198429	197956	196065	204588	211564	219582	234722	227679
	Gross Enrolment Ratio	92.25	87.93	89.81	91.78	88.63	85.74	87.00	87.49	88.30	91.96	86.90
EASTERN	Total Population(6-11yrs)	298726	310309	319858	329701	340993	352663	364724	377191	390075	402687	415656
	Total Enrolment	290740	265075	273876	289820	288050	287670	299719	302545	309648	321393	316031
	Gross Enrolment Ratio	97.33	85.42	85.62	87.90	84.47	81.57	82.18	80.21	79.38	79.81	76.03
GREATER ACCRA	Total Population(6-11yrs)	269714	280242	288861	297746	310835	324493	338743	353612	369126	384781	400936
	Total Enrolment	183723	158982	169205	256604	279448	280672	276418	294332	291221	312603	293533
	Gross Enrolment Ratio	68.12	56.73	58.58	86.18	89.90	86.50	81.60	83.24	78.89	81.24	73.21
NORTHERN	Total Population(6-11yrs)	220540	229112	236162	243428	254316	265686	277560	289956	302901	315807	329277
	Total Enrolment	74402	91061	95148	125463	132844	136328	140099	126555	132273	152200	148363
	Gross Enrolment Ratio	33.74	39.75	40.29	51.54	52.24	51.31	50.48	43.65	43.67	48.19	45.06
UPPER EAST	Total Population(6-11yrs)	138802	144225	148661	153233	158754	164471	170391	176520	182866	188837	195242
	Total Enrolment	44118	45022	50933	66102	67803	75875	85739	89434	93426	96444	82010
	Gross Enrolment Ratio	31.78	31.22	34.26	43.14	42.71	46.13	50.32	50.67	51.09	51.07	42.00
UPPER WEST	Total Population(6-11yrs)	77316	80339	82809	85356	88186	91111	94129	97247	100465	103594	106824
	Total Enrolment	27579	30830	36797	43215	42881	48909	52294	53879	54163	54734	55145
	Gross Enrolment Ratio	35.67	38.37	44.44	50.63	48.63	53.68	55.56	55.40	53.91	52.84	51.62
VOLTA	Total Population(6-11yrs)	207515	215594	222227	229062	234912	242149	248963	255964	263156	269961	277023
	Total Enrolment	195588	171499	197036	196856	209294	219301	229542	232601	234485	238946	234784
	Gross Enrolment Ratio	94.25	79.55	88.66	85.94	89.09	90.56	92.20	90.87	89.10	88.51	84.75
WESTERN	Total Population(6-11yrs)	213212	221457	228275	235301	244732	254536	264729	275320	286333	297340	308646
	Total Enrolment	171144	177591	189562	199586	207315	203249	219687	224432	231141	242743	235130
	Gross Enrolment Ratio	80.27	80.19	83.04	84.82	84.71	79.85	82.99	81.52	80.72	81.64	76.18



FEMALE GROSS INTAKE RATE IN JUNIOR SECONDARY SCHOOLS (NATIONAL AND REGIONAL FIGURES)

REGION	DESCRIPTION	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98
NATIONAL	Total Population(12yrs)	165242	169742	175081	180586	185921	191411	197061	202873	208855	217527	226557
	Total Admission	75717	80840	85053	90126	97867	103881	107865	111851	118780	123438	124793
	Gross Intake Rate	45.82	47.63	48.58	49.91	52.64	54.27	54.74	55.13	56.87	56.75	55.08
ASHANTI	Total Population(12yrs)	27892	28652	29552	30482	31334	32208	33105	34025	34968	36356	37798
	Total Admission	17002	17437	17742	18838	19897	20959	21564	22185	23394	24284	25950
	Gross Intake Rate	60.96	60.86	60.04	61.80	63.50	65.07	65.14	65.20	66.90	66.80	68.65
BRONG AHAFO	Total Population(12yrs)	16327	16772	17299	17843	18478	19135	19814	20515	21241	22249	23302
	Total Admission	7111	9598	9446	9748	10707	11118	11620	11365	11685	12251	12259
	Gross Intake Rate	43.55	57.23	54.60	54.63	57.94	58.10	58.65	55.40	55.01	55.06	52.61
CENTRAL	Total Population(12yrs)	14541	14937	15407	15891	16200	16514	16834	17158	17488	18031	18591
	Total Admission	7916	8528	8775	9490	10093	10299	10804	11295	12081	12674	12950
	Gross Intake Rate	54.44	57.09	56.95	59.72	62.30	62.37	64.18	65.83	69.08	70.29	69.66
EASTERN	Total Population(12yrs)	21952	22550	23259	23991	24612	25247	25898	26564	27245	28270	29331
	Total Admission	14053	12706	13409	14125	14620	14759	15044	15279	16153	16857	16965
	Gross Intake Rate	64.02	56.35	57.65	58.88	59.40	58.46	58.09	57.52	59.29	59.63	57.84
GREATER ACCRA	Total Population(12yrs)	20522	21081	21744	22428	23302	24208	25148	26124	27135	28514	29962
	Total Admission	9599	11468	13243	14091	16900	18636	19027	20500	21176	21595	22412
	Gross Intake Rate	46.77	54.40	60.90	62.83	72.53	76.98	75.66	78.47	78.04	75.73	74.80
NORTHERN	Total Population(12yrs)	16415	16862	17392	17939	18619	19323	20054	20810	21594	22669	23796
	Total Admission	1485	1974	2035	2189	2865	3118	3667	3676	4238	4646	4183
	Gross Intake Rate	9.05	11.71	11.70	12.20	15.39	16.14	18.29	17.66	19.63	20.49	17.58
UPPER EAST	Total Population(12yrs)	10615	10904	11247	11600	11921	12251	12588	12935	13290	13813	14357
	Total Admission	1265	1312	1358	1587	1666	2060	2250	2626	3078	3638	2763
	Gross Intake Rate	11.92	12.03	12.07	13.68	13.98	16.81	17.87	20.30	23.16	26.34	19.24
UPPER WEST	Total Population(12yrs)	5932	6094	6286	6483	6644	6808	6975	7146	7321	7588	7864
	Total Admission	744	1184	1322	1422	1591	1767	2006	2292	2405	2586	2342
	Gross Intake Rate	12.54	19.43	21.03	21.93	23.95	25.95	28.76	32.07	32.85	34.08	29.78
VOLTA	Total Population(12yrs)	15591	16014	16520	17039	17371	17709	18052	18400	18755	19339	19940
	Total Admission	9957	9044	9548	9762	10340	11301	11699	11858	13014	12640	12903
	Gross Intake Rate	63.86	56.48	57.80	57.29	59.52	63.82	64.81	64.45	69.39	65.36	64.71
WESTERN	Total Population(12yrs)	15455	15876	16375	16890	17440	18008	18593	19196	19818	20698	21616
	Total Admission	6585	7589	8175	8874	9188	9864	10184	10775	11556	12267	12066
	Gross Intake Rate	42.61	47.80	49.92	52.54	52.68	54.78	54.77	56.13	58.31	59.27	55.82

MALE GROSS INTAKE RATE IN JUNIOR SECONDARY SCHOOLS(NATIONAL AND REGIONAL FIGURES)

REGION	DESCRIPTION	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98
NATIONAL	Total Population(12yrs)	163887	169364	175024	180873	186330	191953	197739	203700	209838	218423	227359
	Total Admission	105138	112239	115488	125472	132010	136062	140319	142217	149119	152300	150584
	Gross Intake Rate	**64.15**	**66.27**	**65.98**	**69.37**	**70.85**	**70.88**	**70.96**	**69.82**	**71.06**	**69.73**	**66.23**
ASHANTI	Total Population(12yrs)	27489	28408	29357	30338	31194	32074	32977	33904	34856	36190	37592
	Total Admission	22791	23133	22604	24059	24922	26171	26131	26359	27761	28199	29719
	Gross Intake Rate	**82.91**	**81.43**	**77.00**	**79.30**	**79.89**	**81.60**	**79.24**	**77.75**	**79.64**	**77.92**	**79.06**
BRONG AHAFO	Total Population(12yrs)	17254	17831	18427	19042	19741	20465	21214	21990	22794	23899	25031
	Total Admission	10044	13043	12616	13422	13958	14228	14633	13975	14652	14919	14884
	Gross Intake Rate	**58.21**	**73.15**	**68.46**	**70.49**	**70.71**	**69.52**	**68.98**	**63.55**	**64.28**	**62.43**	**59.46**
CENTRAL	Total Population(12yrs)	14467	14951	15450	15967	16332	16706	17087	17477	17875	18475	19093
	Total Admission	12140	12602	12929	14190	14046	13813	13987	14676	15153	15528	15614
	Gross Intake Rate	**83.92**	**84.29**	**83.68**	**88.87**	**86.00**	**82.68**	**81.86**	**83.97**	**84.77**	**84.05**	**81.78**
EASTERN	Total Population(12yrs)	22280	23024	23794	24589	25279	25987	26713	27460	28226	29323	30456
	Total Admission	18920	16764	18498	19403	19591	19283	19355	19600	20592	20804	20725
	Gross Intake Rate	**84.92**	**72.81**	**77.74**	**78.91**	**77.50**	**74.20**	**72.46**	**71.38**	**72.95**	**70.95**	**68.05**
GREATER ACCRA	Total Population(12yrs)	19430	20079	20750	21444	22176	22934	23715	24523	25357	26517	27708
	Total Admission	10662	12825	12818	15341	18401	19660	20124	21583	22168	22574	23290
	Gross Intake Rate	**54.87**	**63.87**	**61.77**	**71.54**	**82.98**	**85.72**	**84.86**	**88.01**	**87.42**	**85.13**	**84.06**
NORTHERN	Total Population(12yrs)	16245	16788	17349	17929	18590	19275	19984	20719	21480	22498	23567
	Total Admission	3299	4945	5188	6095	7737	7796	9112	8605	9154	10125	9019
	Gross Intake Rate	**20.31**	**29.46**	**29.90**	**34.00**	**41.62**	**40.45**	**45.60**	**41.53**	**42.62**	**45.00**	**38.27**
UPPER EAST	Total Population(12yrs)	9947	10279	10623	10978	11306	11643	11991	12348	12715	13194	13726
	Total Admission	2303	2308	2417	2820	3270	3541	4051	4386	5189	5366	3715
	Gross Intake Rate	**23.15**	**22.45**	**22.75**	**25.69**	**28.92**	**30.41**	**33.78**	**35.52**	**40.81**	**40.67**	**27.07**
UPPER WEST	Total Population(12yrs)	5521	5706	5896	6093	6259	6429	6603	6782	6966	7228	7501
	Total Admission	1430	1987	3419	2391	2593	2802	3258	3265	3597	3609	3181
	Gross Intake Rate	**25.90**	**34.82**	**57.99**	**39.24**	**41.43**	**43.58**	**49.34**	**48.14**	**51.64**	**49.93**	**42.41**
VOLTA	Total Population(12yrs)	15143	15649	16172	16712	17087	17470	17861	18260	18668	19271	19906
	Total Admission	13558	13075	13024	14521	14412	15306	15912	15886	16507	16478	16021
	Gross Intake Rate	**89.53**	**83.55**	**80.53**	**86.89**	**84.34**	**87.61**	**89.09**	**87.00**	**88.42**	**85.51**	**80.48**
WESTERN	Total Population(12yrs)	16111	16649	17206	17781	18366	18970	19594	20237	20901	21828	22779
	Total Admission	9991	11557	11975	13230	13080	13462	13756	13882	14346	14698	14416
	Gross Intake Rate	**62.01**	**69.42**	**69.60**	**74.41**	**71.22**	**70.96**	**70.21**	**68.60**	**68.64**	**67.34**	**63.29**

FEMALE GROSS INTAKE RATE IN PRIMARY SCHOOLS(NATIONAL AND REGIONAL FIGURES)

REGION	DESCRIPTION	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98
NATIONAL	Total Population(6yrs)	200302	211222	217696	224367	233355	242696	252415	262516	273024	281580	290398
	Total Admission	159421	161576	171268	184852	187256	186926	192957	190278	192460	214140	219444
	Gross Intake Rate	79.59	76.50	78.67	82.39	80.25	77.02	76.44	72.48	70.49	76.05	75.57
ASHANTI	Total Population(6yrs)	33810	35653	36745	37872	39328	40838	42404	44028	45712	47062	48449
	Total Admission	32040	29513	31376	34999	36381	36400	37268	35835	36148	39317	40999
	Gross Intake Rate	94.76	82.78	85.39	92.41	92.51	89.13	87.89	81.39	79.08	83.54	84.62
BRONG AHAFO	Total Population(6yrs)	19791	20870	21510	22169	23193	24262	25380	26547	27767	28800	29869
	Total Admission	17763	17866	18245	19138	18261	18532	20289	19231	19523	22940	24754
	Gross Intake Rate	89.75	85.61	84.82	86.33	78.73	76.38	79.94	72.44	70.31	79.65	82.88
CENTRAL	Total Population(6yrs)	17626	18587	19157	19744	20333	20939	21562	22202	22861	23341	23830
	Total Admission	16756	18173	18936	18296	17555	17279	17930	18646	19227	21014	20682
	Gross Intake Rate	95.06	97.77	98.85	92.67	86.34	82.52	83.16	83.98	84.10	90.03	86.79
EASTERN	Total Population(6yrs)	26610	28061	28921	29807	30891	32012	33173	34373	35616	36594	37596
	Total Admission	27454	27168	28004	26475	26427	26041	26802	27137	27612	29392	29716
	Gross Intake Rate	103.17	96.82	96.83	88.82	85.55	81.35	80.79	78.95	77.53	80.32	79.04
GREATER ACCRA	Total Population(6yrs)	24877	26233	27037	27865	29246	30694	32212	33804	35472	36911	38405
	Total Admission	16170	14043	14856	22426	24304	24163	23305	23286	22829	24759	23465
	Gross Intake Rate	65.00	53.53	54.95	80.48	83.10	78.72	72.35	68.89	64.36	67.08	61.10
NORTHERN	Total Population(6yrs)	19897	20982	21625	22288	23369	24501	25687	26928	28229	29344	30501
	Total Admission	6803	9810	9494	13195	13196	12455	12328	10478	10911	15416	17720
	Gross Intake Rate	34.19	46.75	43.90	59.20	56.47	50.83	47.99	38.91	38.65	52.54	58.10
UPPER EAST	Total Population(6yrs)	12867	13568	13984	14413	14963	15533	16125	16737	17373	17881	18403
	Total Admission	4343	5181	6680	7713	7451	8078	9198	8983	9301	10536	10671
	Gross Intake Rate	33.75	38.19	47.77	53.51	49.80	52.01	57.04	53.67	53.54	58.92	57.99
UPPER WEST	Total Population(6yrs)	7191	7583	7816	8055	8339	8631	8934	9247	9570	9822	10080
	Total Admission	2845	3681	4004	4687	4436	4926	5141	5367	5274	5921	6274
	Gross Intake Rate	39.56	48.54	51.23	58.19	53.20	57.07	57.54	58.04	55.11	60.28	62.24
VOLTA	Total Population(6yrs)	18899	19930	20541	21170	21803	22453	23122	23810	24517	25033	25558
	Total Admission	18045	17815	20123	18873	19547	20154	20855	20914	21102	22560	22691
	Gross Intake Rate	95.48	89.39	97.97	89.15	89.65	89.76	90.20	87.84	86.07	90.12	88.78
WESTERN	Total Population(6yrs)	18734	19755	20360	20984	21890	22833	23816	24840	25907	26792	27707
	Total Admission	17202	18326	19550	19050	19698	18898	19841	20401	20533	22285	22472
	Gross Intake Rate	91.82	92.77	96.02	90.78	89.99	82.77	83.31	82.13	79.26	83.18	81.11

MINISTRY OF EDUCATION

EXTERNAL FUNDING: 1987-1999

YEAR	PROGRAMME/ PROJECT	AMOUNT	EXTERNAL AGENCY	NATURE OF ASSISTANCE	BENEFICIARY SUB-SECTOR	PERIOD
1987	1. Education Sector Adjustment Credit (EdSAC I)	$34.5 million	World Bank (IDA)	Loan	Junior Secondary Schools	1987-1991
1987	2. Northern Area Education Project	$4.4 million	OPEC Fund	Loan	Basic Schools in 3 Northern Regions	1987-1991 Extended to 1999
1987	3. Maths & Science College Project	$4.4 million	Saudi Fund	Loan	Senior Secondary Education	1988-1992 Extended to 1999
1990	4. EdSAC II	$54.0 million	World Bank (IDA)	Loan	Senior Sec. Schools	1990-1995
1993	5. Tertiary Education Project	$45.0 million	World Bank (IDA)	Loan	Tertiary Education	1993-1998
1993	6. Tertiary Education Rehabilitation Project	$20.0 million	African Development Bank	Loan	Tertiary Education	1993-1998 (Extended to Dec. 1999
1992	7. Literacy and Functional Skills Project	$17.4 million	World Bank (IDA)	Loan	Non-Formal Education	1992-1998
1992	8. "	$ 3.0 million	Norwegian	Grant	"	1992-1998
1991	9. Community Sec. School Project	$15.19 million	World Bank (IDA)	Loan	Senior Secondary Education	1991-1995
1990	10. Primary Education Programme	$32.0 million	USAID	Grant	Primary Education	1991-1997
1995	11. Vocational Skills Project	$9.6 million	World Bank (IDA)	Loan	Technical Education	June 1995 to 2001
1993	12. Primary School Development Project	$65.1 million	World Bank (IDA)	Loan	Primary Schools	1994-1998

YEAR	PROGRAMME/ PROJECT	AMOUNT	EXTERNAL AGENCY	NATURE OF ASSISTANCE	BENEFICIARY SUB-SECTOR	PERIOD
1996	13. Basic Education Sector Improvement Project	$50 million	World Bank (IDA)	Loan	Basic Education	1997-2001
1997	"	£50 million	DFID, U.K	Grant	Basic Education	1997-2001
1997	Basic Education Sector Improvement Project	$53 million	USAID	Grant	Basic Education	1997-2001
1997	Basic Education Sector Improvement Project	DM35 million	Germany (KIW)	Grant	Teacher Education	1997-2000
1999	"	DM6 million	Germany (GTZ)	Grant	Teacher Education	1997-2000
1991	14. Industrial Maintenance Training Programme	$2.056 million	French Government	Grant	Technical Education	1991-1995
1991	15. Technical and Vocational Education Project	$7.3 million	Canada (CIDA)	Grant	Technical Education	1999-2004
1999	16. Literacy and Functional Skills Project II	$34.0 million	World Bank (IDA)	Loan	Non-Formal Education	1999-2004

Appendix 11

THE CURRICULUM OF SCHOOLS: PRIMARY, JSS AND SSS

The relevance of basic education was ensured by the teaching and learning of prevocational and pretechnical subjects. Subjects taught in primary schools at the beginning of the reforms were:

English	Life Skills
Mathematics	Ghanaian Languages
Science	Cultural Subjects
Agriculture/Gardening	Physical Education
Social Studies	

The official language policy made the Ghanaian Language the medium of instruction in lower primary (P1 – P3) as recommended by the Kwapong Committee, while English is taught as one of the subjects on the time table. English is the language of instruction after P3.

The JSS curriculum comprised the following:

English	Life Skills
Mathematics	Ghanaian Language
Science	Cultural Subjects
Agriculture	Physical Education
Social Studies	Pre-technical Skills
French (Optional)	
Pre-Vocational Skills	
Technical Drawing	

Schools were expected to select for study, two vocational subjects that are prevalent in their locality.

Curriculum after ERRC is as follows

Lower Primary :

English
Ghanaian Language and Culture
Mathematics
Environmental Studies
Religious /Moral Education

Subjects taught as physical activities:
Physical Education
Music and Dance

Upper Primary Curriculum:

English
Ghanaian Language and Culture Mathematics
Integrated Science (Science and Agricultural Science)
Environmental Studies
Religious /Moral Education

Subjects taught as physical activities:
Physical Education
Music and Dance

The JSS curriculum was similarly reduced from 13 to 9:

English
Ghanaian Language and Culture
Mathematics
Science
Agricultural Science

Pre-technical Skills (including Technical Drawing)
Religious /Moral Education
Social Studies
French (Optional)

Subjects taught but examined only internally:
Music
Life Skills
Physical Education

These changes took effect from 1996.

Curriculum of the SSS

The SSS curriculum comprises a set of **core subjects** which all students offer and three **elective subjects** selected from one out of four programmes. At the beginning of the reforms the following six subjects were the core subjects: English, Mathematics, Agriculture and Environmental science, Life Skills and Ghanaian Language and Social Studies. Following the ERRC, the number was reduced to four (4), namely:

English
Mathematics
Integrated Science
Social Studies (formerly Life Skills, embracing Economics, Geography, History, Government, etc.)

The elective subjects were also reviewed as follows:

Agriculture Programme
Students are required to study:

General Agriculture
One of the following:
Crop Husbandry and Horticulture
Animal Husbandry/ Fisheries/Forestry

One or Two of the following:
Biology
Chemistry
Physics
Mathematics
French or Music

General Programme (Science)
Students are required to study:

i. Mathematics

ii Two or Three of the following subjects:
- Physics
- Chemistry
- Biology
- Technical Drawing
- Geography

General Programme (Arts)
Students are required to study any 3 or 4 of the following:

- Literature - in - English
- French
- Ghanaian Language
- Music
- Christian or Islamic or Traditional Religious Studies
- Economics
- Geography
- History
- Government
- Mathematics (Elective)
- General Knowledge in Art

Business Programme
Students are required to study:

Accounting Option
- Introduction to Business Management
- Accounting
- Any one or two of the following:
  - Business Maths or Principles of Costing
  - Economics
  - Mathematics (Elective)
  - Typewriting
  - French

Secretarial Option
Students are required to study:

- Introduction to Business Management
- Clerical Office Duties
- Typewriting

In addition any one of the following subjects may be selected:
- Accounting
- Business Maths or Principles of Costing
- Mathematics
- Economics
- French or Music
- Literature - in - English

Vocational Programme

Visual Arts Option
Students are required to study:
- General Knowledge in Art
- One Subject from
  - Graphic Design
  - Picture Making and
- One Subject from
  - Ceramics
  - Leatherwork
  - Sculpture
  - Basketry
  - Textiles
  - Jewellry

Home Economics Option
Students are required to study

- Management in Living
- At least one of the following from
  - Food and Nutrition
  - Clothing
- Students may select one or two from
  - Textiles
  - General Knowledge in Art
  - Economics
  - French

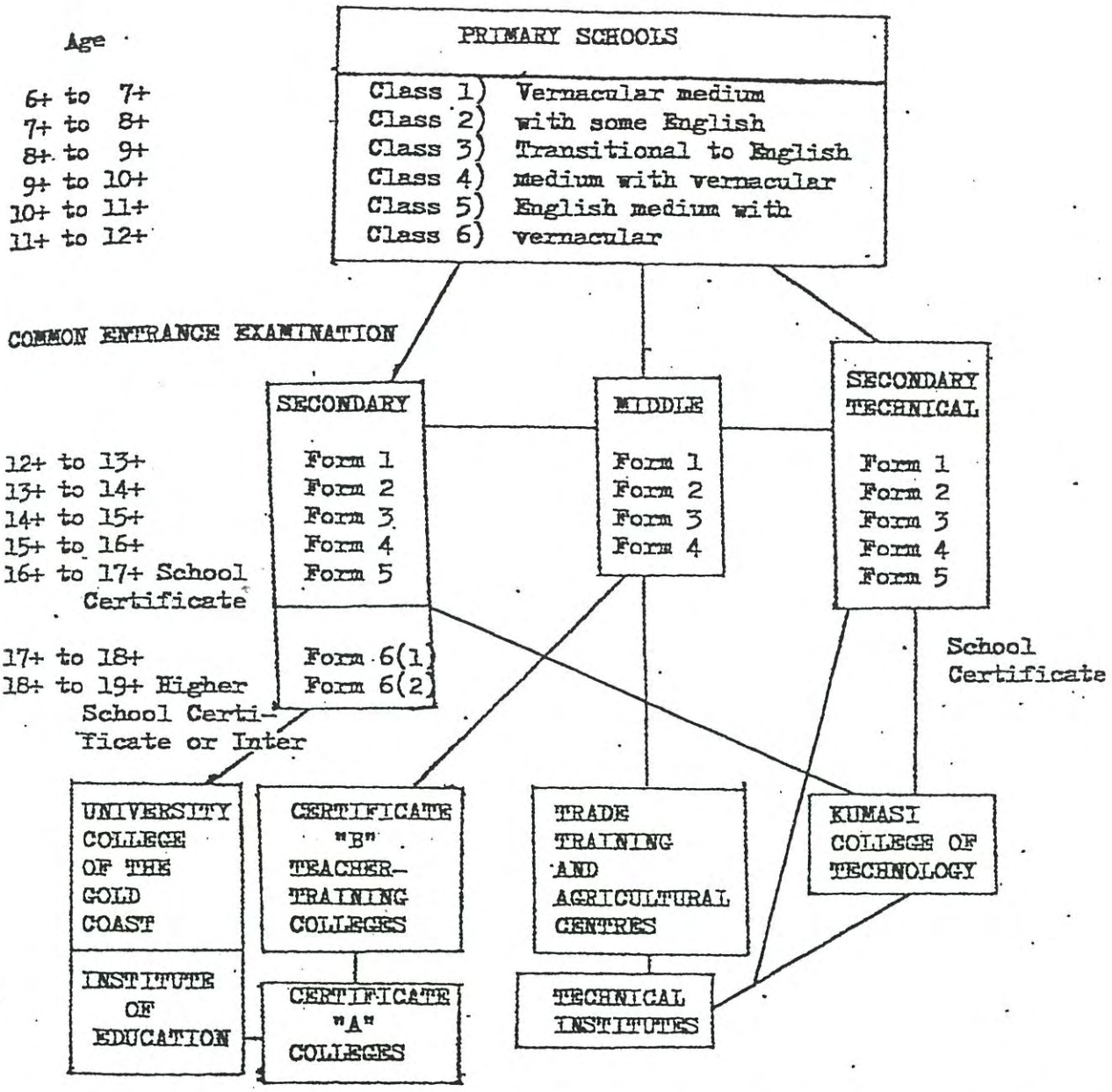
Technical Programme
Students are required to study:

- Technical Drawing
- One of the following applied courses:
  - Applied Electricity
  - Electronics
  - Auto Mechanics
  - Building Construction
  - Metalwork
  - Woodwork

- One or two of the following courses:
  - Physics
  - Mathematics (Elective)
  - French

APPENDIX 12

THE EDUCATIONAL STRUCTURE FOR ADPE (1951)



Notes: 1. For the present, until the standard of primary schools is raised entry to secondary schools will be from progressively lower forms in middle schools. Even when most of the pupils enter secondary schools from the primary schools there will be provision for late entries from lower forms of middle schools.

2. Post-secondary pupils will receive training as teachers in the Teacher Training Department of the Kumasi College of Technology.

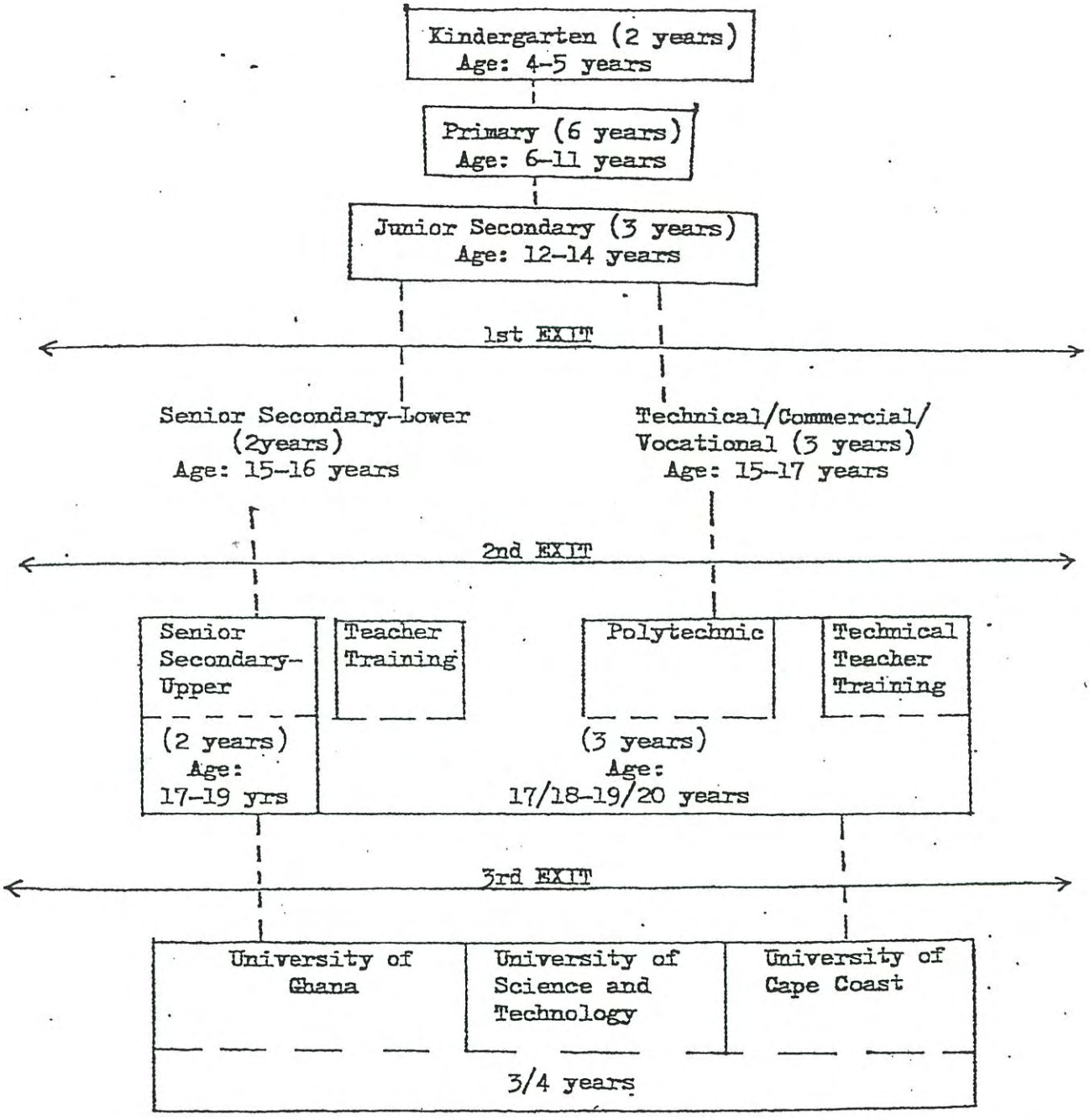
3. Post-primary pupils will be trained as teachers in Certificate B colleges after appointment as untrained teachers, and in Certificate A colleges after a period of teaching with Certificate B.

Source: Gold Coast Govt., Accelerated Development Plan for Education, 1951, Govt. Printer, Accra, 1951, p.23.

This structure has been altered again in 1974 – See Appendix 13

APPENDIX 13

NEW STRUCTURE OF EDUCATION
(Due to operate from September 1975)

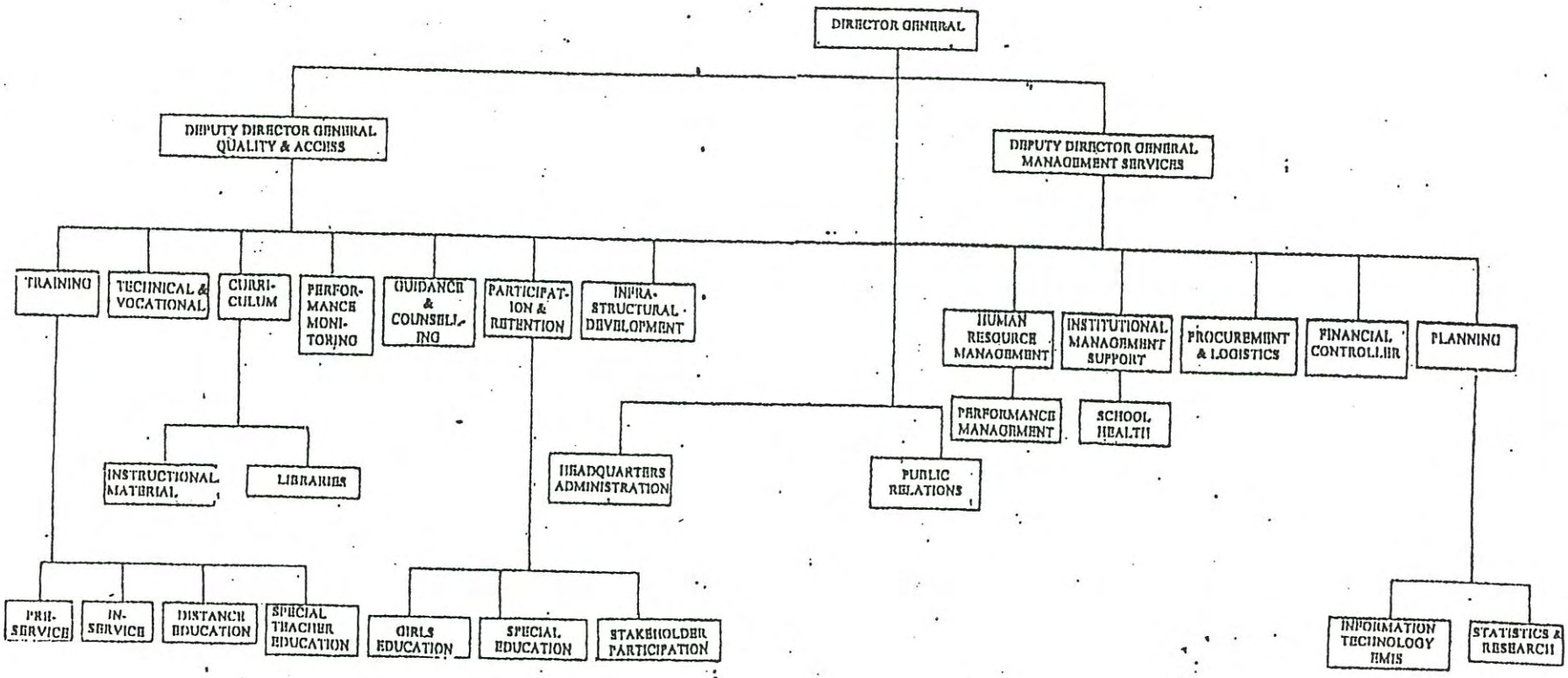


New structure of education arrived at in 1974. This model shows the reduction in the first cycle number of years in school. This may have grave implications for unemployment since children will now leave school 2 years earlier. Compare to 1951 model, Appendix 24.

Source: H.O.A. McWilliam and M.A. Kwamena Poh (1975), op. cit., p.140.

APPENDIX 14

Proposed Structure of the Ghana Education Service - Headquarters



Source: MOE (1998) Ministry of Education, Accra: Ghana.

Appendix 15

RESOURCE PROVISION/CO-ORDINATION

(Response from MOE Inspectors) (17)

1. Resource Item	2. Satisfactory %		3. Not Satisfactory %	
i Equipment:				
Amount	-		100	(17)
Suitability of make	*67	(11)	33	(6)
Scope for utilisation (i.e. applicability)	17	(3)	75	(13)
ii Workshops :				
Number	25	(4)	75	(13)
Utilisation by School	17	(3)	75	(13)
iii Teaching Materials :				
Quantity	-		100	(17)
Usability	25	(4)	75	(13)
iv Funds :				
Amount	8	(1)	92	(16)
Nature of provision (mode of supply and timing)	8	(1)	92	(16)
v Staffing :				
Staff Strength	25	(4)	75	(13)
Level and nature of training	17	(3)	83	(14)
Competence in interpreting & using syllabus	17	(3)	75	(13)
Competence in making/using scheme	25	(4)	75	(13)
Competence in constructing C.A. instruments	25	(4)	75	(13)
Competence in using assessment forms	*50	(8.5)	50	(8.5)
Competence in G & C	17	(3)	75	(13)
Competence in operating equipment	33	(6)	58	(10)
Readiness in accepting/ adapting to new teaching method	25	(4)	42	(7)

RESOURCE PROVISION/CO-ORDINATION

(Response from SEC Supervisors)

1. Resource Item	2. Satisfactory %		3. Not Satisfactory %		4. No Answer %	
i Equipment:						
Amount	-	-	67	(11)	33	(5.28)
Suitability of make	17	(2.72)	25	(4)	42	(6.72)
Scope for utilisation (i.e. applicability)	8	(1.28)	42	(6.72)	50	(8)
i Workshops :						
Number	-	-	67	(11)	33	(5.28)
Utilisation by school	-	-	42	(6.72)	58	(9.28)
i Teaching Materials:						
Quantity	-	-	58	(9.28)	42	(6.72)
Usability	50	(8)	33	(5.28)	17	(2.72)
ı Funds:						
Amount	-	-	67	(11)	33	(5.28)
Nature of Provision (mode of supply and timing)	-	-	58	(9.28)	42	(6.72)
Staffing:						
Staff strength	25	(4)	42	(6.72)	33	(5.28)
Level and nature of training	25	(4)	42	(6.72)	33	(5.28)
Competence in interpreting & using syllabus	25	(4)	33	(5.28)	42	(6.72)
Competence in making/using scheme	33	(5.28)	33	(5.28)	34	(5.44)
Competence in constructing C.A. instruments	25	(4)	33	(5.28)	42	(6.72)
Competence in using assessment forms	33	(5.28)	33	(5.28)	34	(5.44)
Competence in G & C	8	(1.28)	50	(8)	42	(6.72)
Competence in operating equipment	8	(1.28)	50	(8)	42	(6.72)
Readiness in accepting & adapting to new teaching method	33	(5.28)	17	(2.72)	50	(8)

RESOURCE PROVISION/CO-ORDINATION

(Response from Principals)

1. Resource Item	2. Satisfactory %		3. Not Satisfactory %		4. No Answer %	
i Equipment:						
Amount	8	(1.2)	92	(13.8)	-	-
Suitability of make	50	(7.5)	50	(7.5)	-	-
Scope for utilisation	50	(7.5)	50	(7.5)	-	-
ii Workshops:						
Number	42	(6.3)	58	(8.7)	-	-
Utilisation by schools	25	(3.75)	67	(10.05)	8	(1.2)
iii Funds:						
Amount	8	(1.2)	92	(13.8)	-	-
Nature of provision	42	(6.3)	58	(8.7)	-	-
iv Teaching Materials:						
Quantity	-	-	100	(15)	-	-
Suitability	-	-	83	(12.45)	17	(2.55)
v Staffing:						
Staff strength	33.3	(4.95)	67	(10.05)	-	-
Level and nature of training	50	(7.5)	50	(7.5)	-	-
Competence in interpreting syllabus	75	(11.25)	25	(3.75)	-	-
Competence in making/using schemes	83	(12.45)	17	(2.55)	-	-
Competence in constructing C.A. instruments	58	(8.7)	33.3	(4.995)	9	(1.35)
Competence in using assessment forms	75	(11.25)	25	(3.75)	-	-
Competence in G & C practice	33.3	(4.9995)	67	(10.05)	-	-
Competence in operating equipment	50	(7.5)	50	(7.5)	-	-
Readiness in accepting/adapting to new teaching methods	67	(10.05)	33.3	(4.9)	-	-

Resource Provision/Co-ordination

(Responses from Teachers)

1. Resource Item	2. Satisfactory	%	3. Not Satisfactory	%	4. No Answer	%
i Equipment:						
Amount	37	(38.22)	58	(67.28)	9	(10.44)
Suitability of make	34	(39.44)	50	(58.)	16	(18.56)
Scope for utilisation	17	(19.72)	66	(76.56)	17	(19.72)
ii Workshops:						
Number	34	(39.44)	50	(58)	-	-
Utilisation by schools	17	(19.72)	66	(76.56)	-	-
iii Funds:						
Amount	-	-	83	(96.28)	17	(19.72)
Nature of provision	17	(19.72)	66	(76.56)	17	(19.72)
iv Teaching Materials:						
Quantity	8	(9.28)	83	(96.28)	9	(10.44)
Type (Suitability)	42	(48.72)	50	(58)	8	(9.28)
v Staffing:						
Staff strength	34	(39.44)	58	(67.28)	8	(9.28)
Level and nature of training	58	(67.28)	34	(39.44)	8	(9.28)
Competence in interpreting syllabus	75	(87)	17	(19.72)	8	(9.28)
Competence in making/using schemes	66	(76.56)	25	(29)	9	(10.44)
Competence in constructing C.A. instruments	34	(39.44)	58	(67.28)	8	(9.28)
Competence in using C.A. forms	50	(58)	41	(47.56)	9	(10.44)
Competence in G & C practice	25	(29)	66	(76.56	9	(10.44)
Competence in operating equipment	34	(39.44)	50	(58)	-	-
Readiness in accepting /adapting new teaching methods	58	(67.28)	34	(39.44)	8	(9.28)

Appendix 16

RESPONSES ON CONCEPTUALISATION OF CONTINUOUS ASSESSMENT

Concept	Respondents	4 Strongly Agree %	3 Agree %	2 Do not Agree %	1 Not sure%	0 (for non-respondents) Total %
(i) Assessment for Child Guidance	Teachers	50 (66)	42 (55)	8 (10)	nil	100 (131)
	Educ. Officials	68 (22)	24 (8)	8 (3)	nil	100 (33)
(ii) Ability Selection	Teachers	17 (22)	41 (54)	25 (33)	17 (22)	100 (131)
	Educ. Officials	8 (3)	38 (12)	38 (12)	8 (3)	No resp 8(3) Total 100(33)
	Students		33(165)	25(125)	42(210)	100 (500)
(iii) Motivation to hard work for students	Teachers	25 (33)	50 (66)	17 (22)	8 (10)	100 (131)
	Educ. Officials	38 (12)	31 (10)	15 (5)	8 (3)	No resp 8 (3) Total 100(33))
	Students		100(500)			100 (500)
(iv) Teacher control mechanism	Teachers	25 (33)	67 (88)	8 (10)	-	100 (131)
	Educ. officials	31 (10)	31 (10)	15 (5)	15 (5)	No resp 8(3) Total 100(33)
	Students		58(290)	25(125)	17 (85)	100 (500)
(v) Reliable assessment method	Teachers	50 (66)	33 (43)	17 (22)		100 (131)
	Educ. Officials	85 (28)	15 (5)		8 (40)	100 (33)
	Students		92(460)			100 (500)
(vi) Monitoring teacher effectiveness/self appraisal mechanism	Teachers	17 (22)	50 (66)	25 (33)	8 (10)	100 (131)
	Educ. Officials	38 (12)	31 (10)	15 (5)	8 (3)	No resp 8(3) Total 100 (33)
	Students		58(290)	33(165)	8 (40)	99 (495)

Figures in ( ) = actual numbers, not percentages